SCADAPack Vision Operator Interface

Installation and User Manual
Vision10, Vision 50, Vision 60

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SCADAPack Vision Operator Interface – Installation and User Manual

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Table of Contents

1 OVERVIEW 8

1.1 Organization of the Manual 10

1.2 Additional Documentation 10

2 IMPORTANT SAFETY INFORMATION 11

3 SCADAPACK VISION-10 12

3.1 SCADAPack Vision-10 Installation 12

3.2 SCADAPack Vision-10 Reference 14

3.2.1 Front Panel 14
3.2.1.1 LCD Screen 14
3.2.1.2 Output LEDs 14
3.2.1.3 Power Management Key 14
3.2.1.4 Application keys 15
3.2.1.5 Initialization Procedure 15

3.2.2 Back Panel 16
3.2.2.1 PLC Port 16
3.2.2.2 PLC Port Cables 17
3.2.2.3 Serial Port 19
3.2.2.4 Serial Port Cable 21

4 SCADAPACK VISION-50 22

4.1 SCADAPack Vision-50 Installation 22

4.2 SCADAPack Vision-50 Reference 24

4.2.1 Front Panel 24
4.2.1.1 LCD Screen 24
4.2.1.2 Output LEDs 24
4.2.1.3 Power Management Key 25
4.2.1.4 Application keys 25
4.2.1.5 Initialization Procedure 25

4.2.2 Back Panel 25
4.2.2.1 PLC Port 26
4.2.2.2 PLC Port Cables 27
4.2.2.3 Serial Port 29
4.2.2.4 Serial Port Cable 30

5 SCADAPACK VISION-60 31

5.1 SCADAPack Vision-60 Installation 31

5.2 SCADAPack Vision-60 Reference 33
5.2.1 Front Panel 33
5.2.1.1 LCD Screen 33
5.2.1.2 Output LEDs 33
5.2.1.3 Power Management Key 34
5.2.1.4 Application keys 34
5.2.1.5 Initialization Procedure 34
5.2.2 Back Panel 34
5.2.2.1 PLC Port 35
5.2.2.2 PLC Port Cables 36
5.2.2.3 Serial Port 38
5.2.2.4 Serial Port Cable 39

6 SCADAPACK VISION CONFIGURATION SOFTWARE 40

6.1 SCADAPack Vision Configuration Software Environment 42
6.1.1 SCADAPack Vision Configuration Software Display 42
6.1.1.1 Title Bar 42
6.1.1.2 Menu Bar 42
6.1.1.3 Tool Bar 43
6.1.1.4 Status Bar 44
6.1.2 Task Sequence Algorithm 44
6.1.3 SCADAPack Vision-10 Initialization 48
6.1.4 SCADAPack Vision-50 Initialization 48
6.1.5 SCADAPack Vision-60 Initialization 49
6.1.6 Application and Firmware Download 49
6.2 SCADAPack Vision-10 Program Development 52
6.2.1 Open SCADAPack Vision Software 52
6.2.2 Create New Configuration File 52
6.2.3 Configure Network Configuration 53
6.2.4 Configure Tags 54
6.2.5 Configure Screens 55
6.2.6 Configure Application Task List 64
6.2.7 Save the Configuration file 66
6.2.8 Connect SCADAPack Vision-10 to PLC 67
6.2.9 Initialize SCADAPack Vision-10 67
6.2.10 Download Configuration File to SCADAPack Vision-10 68
6.3 SCADAPack Vision-50 Program Development 69
6.3.1 Open SCADAPack Vision Software 69
6.3.2 Create New Configuration File 69
6.3.3 Configure Network Configuration 70

6.3.4 Configure Tags 71
6.3.5 Configure Screens 73
6.3.6 Configure Application Task List 77
6.3.7 Save the Configuration file 78
6.3.8 Connect SCADAPack Vision-50 to PLC 78
6.3.9 Initialize SCADAPack Vision-50 78
6.3.10 Download Configuration File to SCADAPack Vision-50 79
6.4 SCADAPack Vision-60 Program Development 80
6.4.1 Open SCADAPack Vision Software 80
6.4.2 Create New Configuration File 80
6.4.3 Configure Network Configuration 81
6.4.4 Configure Tags 82
6.4.5 Configure Screens 85
6.4.6 Configure Application Task List 88
6.4.7 Save the Configuration file 90
6.4.8 Connect SCADAPack Vision-60 to PLC 90
6.4.9 Initialize SCADAPack Vision-60 90
6.4.10 Download Configuration File to SCADAPack Vision-60 91

7 SCADAPACK VISION CONFIGURATION SOFTWARE REFERENCE 92

7.1 File Menu 92
7.1.1 New 92
7.1.2 Open 92
7.1.3 Close 92
7.1.4 Save 92
7.1.5 Save as 93
7.1.6 Information 93
7.1.7 Exit 93
7.2 Define Menu 94
7.2.1 Vision Settings 94
7.2.2 Network Configuration 94
7.2.3 Tag Database 96
7.2.4 Screens 98
7.2.4.1 New Screens Dialog 99
7.2.4.2 Screen Configuration Dialog 99
7.2.4.3 Menu Bar 101
7.2.4.4 Screen Toolbar 101
7.2.4.5 Objects & Properties Toolbar 101
7.2.4.6 Tools Toolbar 102

7.2.4.7 Screen Display Edit Box ... 103
7.2.5 Global Keys ... 103
7.2.5.1 Configurable Keys for SCADAPack Vision-10 ... 103
7.2.5.2 Configurable Keys for SCADAPack Vision-50 ... 104
7.2.5.3 Configurable Keys for SCADAPack Vision-60 ... 104
7.2.5.4 Key Combination ... 105
7.2.6 Alarms ... 106
7.2.7 Application Tasklists ... 107
7.3 Communicate ... 109
7.3.1 Communication Port ... 109
7.3.2 Download ... 109
7.3.3 Upload ... 111
7.4 Utilities Menu ... 112
7.4.1 Add or Remove PLCs ... 112
7.4.2 Memory Configuration ... 112
7.5 Screen Menu ... 113
7.5.1 New ... 113
7.5.1.1 Associated Screens: ... 114
7.5.2 Delete ... 115
7.5.3 Duplicate ... 115
7.5.4 Initialize ... 115
7.5.5 Screen Information ... 115
7.5.6 View All Screens ... 116
7.5.7 Select Screens ... 117
7.5.8 Keys For Screen ... 117
7.5.9 Task-lists of Screen ... 119
7.5.10 Zoom In ... 120
7.5.11 Zoom Out ... 120
7.5.12 Show Alphanumeric Grid ... 120
7.5.13 Hide Alphanumeric Grid ... 120
7.5.14 Character Set ... 120
7.5.15 Close Screens Session ... 121
7.6 Objects Menu ... 121
7.6.1 Alphanumeric Objects ... 121
7.6.1.1 Text ... 121
7.6.1.2 Data Entry ... 121
7.6.1.3 Display PLC Data ... 123
7.6.1.4 Bargraph ... 127
7.6.1.5 Alarm ... 127

7.6.2 Flash 129
7.6.3 Speed 129
7.6.4 Animation Properties 129
7.6.4.1 Show/Hide 130
7.6.4.2 Flash 130
7.6.5 Selector 131
7.6.6 Hide Objects Menu 131
7.6.7 Show Objects Menu 131
7.7 Tools Menu 131
7.7.1 Undo 131
7.7.2 Redo 131
7.7.3 Select All 131
7.7.4 Cut 131
7.7.5 Copy 131
7.7.6 Paste 131
7.7.7 Edit 131
7.7.8 Hide Tools 132
7.7.9 Show Tools 132
7.8 Help 132
7.8.1 Index 132
7.8.2 About SCADAPack Vision Series 132
7.9 Key Task Definitions 132

8 WARRANTEE AND LICENSE 135

9 SCADAPACK VISION-10 SPECIFICATIONS 136

10 SCADAPACK VISION-50 SPECIFICATIONS 137

11 SCADAPACK VISION-60 SPECIFICATIONS 138

Index of Figures

Figure 1: SCADAPack Vision-10 8
Figure 2: SCADAPack Vision-50 9
Figure 3: SCADAPack Vision - 60 9
Figure 4: SCADAPack Vision-10 Panel Installation 13
Figure 5: SCADAPack Vision-10 Front Panel Layout 14
Figure 6: SCADAPack Vision-10 Back Panel Layout 16
Figure 7: SCADAPack Vision-10 PLC Port Connections 16

Figure 8: SCADAPack Vision-10 PLC Port to PLC Serial Port Connection 17
Figure 9: SCADAPack Vision-10 PLC Port to SCADAPack Serial Port Connection 18
Figure 10: SCADAPack Vision-10 PLC Port to SCADAPack LP Serial Port Connection....18
Figure 11: SCADAPack Vision-10 to SCADAPack32 RJ-45 Serial Port Connector.....19
Figure 12: SCADAPack Vision-10 Serial Port Connection.....19
Figure 13: SCADAPack Vision-10 Serial Port to Computer Serial Port Connection.....21
Figure 14: SCADAPack Vision-50 Panel Installation.....23
Figure 15: SCADAPack Vision-50 Front Panel Layout.....24
Figure 16: SCADAPack Vision-50 Back Panel Layout 26
Figure 17: SCADAPack Vision-50 PLC Port Connections.....26
Figure 18: SCADAPack Vision-50 PLC Port to PLC Serial Port Connection 27
Figure 19: SCADAPack Vision-50 PLC Port to SCADAPack Serial Port Connection 28
Figure 20: SCADAPack Vision-50 PLC Port to SCADAPack LP Serial Port Connection....28
Figure 21: SCADAPack Vision-50 to SCADAPack32 Serial Port Connection.....29
Figure 22 SCADAPack Vision-50 Serial Port Connection.....29
Figure 23: SCADAPack Vision-50 Serial Port to Computer Serial Port Connection.....30
Figure 24: SCADAPack Vision-60 Panel Installation.....32
Figure 25: SCADAPack Vision-60 Front Panel Layout.....33
Figure 26: SCADAPack Vision-60 Back Panel Layout 35
Figure 27: SCADAPack Vision-60 PLC Port Connections.....35
Figure 28: SCADAPack Vision-60 PLC Port to PLC Serial Port Connection 36
Figure 29: SCADAPack Vision-60 PLC Port to SCADAPack Serial Port Connection 37
Figure 30: SCADAPack Vision-60 PLC Port to SCADAPack LP Serial Port Connection....37
Figure 31: SCADAPack Vision-60 to SCADAPack32 Serial Port Connection.....38
Figure 32: SCADAPack Vision-60 Serial Port Connection.....38
Figure 33: SCADAPack Vision-60 Serial Port to Computer Serial Port Connection.....39
Figure 34: Task Sequence Algorithm.....47

1 Overview

The SCADAPack Vision is compact, panel-mounted operator interface terminal for programmable logic controllers. It reads data from and writes data to a programmable logic controller via an RS-232 port. There are three models of SCADAPack Vision, SCADAPack Vision-10 (see ***Figure 1: SCADAPack Vision-10***), SCADAPack Vision-50 (see ***Figure 2: SCADAPack Vision-50***) and SCADAPack Vision-60 (see ***Figure 3: SCADAPack Vision - 60***)

The SCADAPack Vision configuration software is used to configure the SCADAPack Vision operator interface to display data read from the PLC and to allow operator-entered data to be written to the PLC.

SCADAPack Vision-10 has 32-characters, two lines x 16 characters, LCD that displays the data on a series of screens. Seven function buttons are available to navigate through these screens, enter data or control power to the unit.

SCADAPack Vision-50 has 80-characters, four lines x 20 characters, LCD that displays the data on a series of screens. Twenty-one function buttons are available to navigate through these screens, enter data or control power to the unit.

SCADAPack Vision-60 has 80-characters, four lines x 20 characters, LCD that displays the data on a series of screens. Twenty-one function buttons are available to navigate through these screens, enter data or control power to the unit. The SCADAPack Vision - 60 is identical to the SCADAPack Vision – 50 with the exception that the SCADAPack Vision – 60 has 128K of application memory.

Data-display screens and button functionality are user-defined in applications created with the companion SCADAPack Vision configuration software. These applications are downloaded to the SCADAPack Vision via a second RS-232 port.

Figure 1: SCADAPack Vision-10

Figure 2: SCADAPack Vision-50

Insert Photo Here
Vision 60

Figure 3: SCADAPack Vision - 60

1.1 Organization of the Manual

This manual describes the SCADAPack Vision-10 and SCADAPack Vision-50 operator interface (OI) terminals and companion configuration software. It is organized into the following sections.

Chapter ***3- SCADAPack Vision-10*** describes installation of the hardware and the hardware features of the SCADAPack Vision-10 Operator Interface.

Chapter ***4-SCADAPack Vision-50*** describes installation of the hardware and the hardware features of the SCADAPack Vision-50 Operator Interface.

Chapter ***5-SCADAPack Vision-60*** describes installation of the hardware and the hardware features of the SCADAPack Vision-60 Operator Interface.

describes each of the SCADAPack Vision configuration commands available from the SCADAPack Vision menu bar.

1.2 Additional Documentation

Additional documentation on the SCADAPack and TeleSAFE controllers is found in the following documents.

The ***SCADAPack System Manual*** is a complete reference to the Controller and I/O modules used with SCADAPack controllers. It contains the ***SCADAPack Controller Hardware Manual*** – a complete reference to the SCADAPack hardware – and hardware manuals for all 5000 Series I/O modules.

The ***TeleSAFE Micro16 System Manual*** is a complete reference to the Controller and I/O modules used with the TeleSAFE Micro16 Controller. It contains the ***TeleSAFE Micro16 SCADA Controller Hardware Manual*** – a complete reference to the TeleSAFE Micro16 hardware – and hardware manuals for all 5000 Series I/O modules.

2 Important Safety Information

Power, input and output (i/o) wiring must be in accordance with Class I, Division 2 wiring methods Article 501-4 (b) of the National Electrical Code, NFPA 70 for installations in the U.S., or as specified in Section 18-1J2 of the Canadian Electrical Code for installations within Canada and in accordance with the authority having jurisdiction.

WARNING !
EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS 1, DIVISION 2.

WARNING !
EXPLOSION HAZARD – WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES.

WARNING !
EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

3 SCADAPack Vision-10

This section of the manual describes installation of the hardware and the hardware features of the SCADAPack Vision-10 Operator Interface as well as pin-outs for cables used to connect SCADAPack Vision-10 and PLC or computer.

3.1 SCADAPack Vision-10 Installation

Hardware installation of the SCADAPack Vision-10 requires cutting an opening into a panel cover or other suitable flat surface, and securing the SCADAPack Vision-10 to the cover with provided hardware.

Each mounting hardware kit contains one cardboard cutout template, one foam rubber gasket, two mounting screws, two plastic clamps and four hex nuts.

To mount the SCADAPack Vision-10 in the panel cover:

- Cut a 92.00mm x 45.00mm (1/8 DIN size) rectangular opening into the panel cover.
- Insert the SCADAPack Vision-10 into the foam rubber gasket.
- Insert the SCADAPack Vision-10/gasket assembly into the rectangular opening in the panel.
- Insert a mounting screw into the small circular hole in the clamp.
- Thread two hex nuts (touching together) onto the end of the mounting screw and pull the mounting screw head away from the clamp to seat the hex nuts into the hexagonal opening.
- Attach the clamp/screw assembly to the SCADAPack Vision-10 by inserting the two clamp hooks into the mounting holes on one side of the SCADAPack Vision-10 and pulling the clamp away from the panel to lock the clamp in place.
- Push the screw towards the front of the SCADAPack Vision-10 until it makes contact with the inside of the panel.
- Tighten screw to compress the gasket and secure the SCADAPack Vision-10 to the panel. Do not over-tighten.
- Repeat clamp/screw assembly and mounting procedure for opposite side of SCADAPack Vision-10.

See ***Figure 4: SCADAPack Vision-10 Panel Installation*****.**

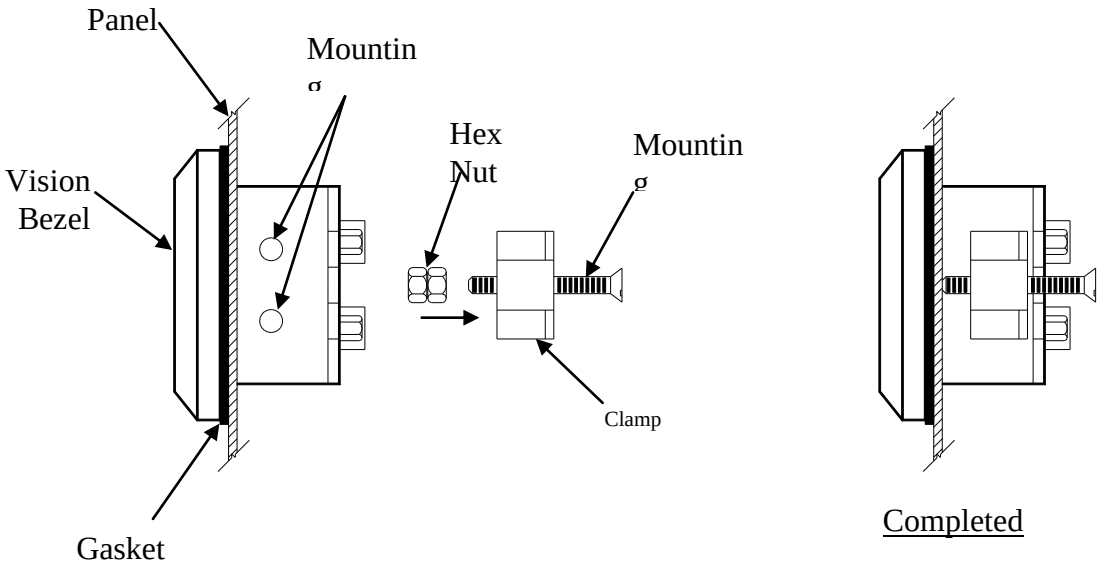


Figure 4: SCADAPack Vision-10 Panel Installation

The SCADAPack Vision-10 operator interface is made up of a front data-display panel and a back communication panel.

3.2 SCADAPack Vision-10 Reference

3.2.1 Front Panel

The front panel consists of an LCD screen, two output LEDs, one power key and six application keys. See ***Figure 5: SCADAPack Vision-10 Front Panel Layout***.

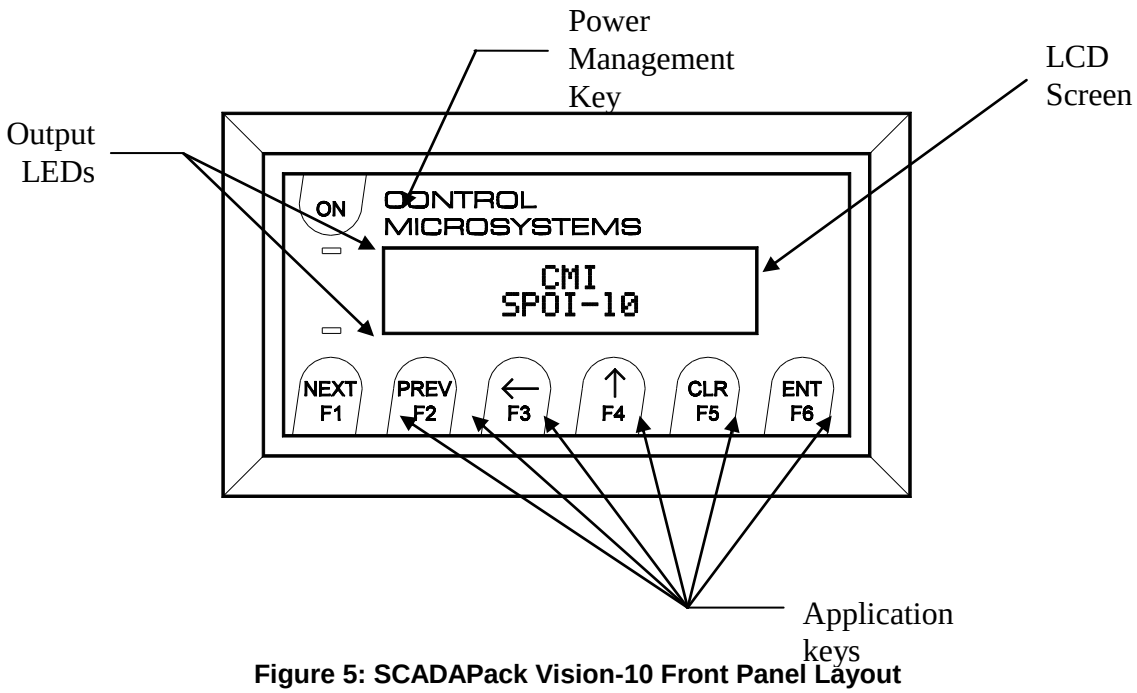


Figure 5: SCADAPack Vision-10 Front Panel Layout

3.2.1.1 LCD Screen

The LCD (Liquid Crystal Display) screen displays two lines of 16 characters for a maximum of 32 characters.

Data to be read from the PLC is displayed on this screen and is configured using the SCADAPack Vision configuration software.

Data to be entered by the operator and written to the PLC is also displayed on this screen and is configured using the SCADAPack Vision configuration software.

3.2.1.2 Output LEDs

Two LEDs are used to display the status of single-bit addresses read from the PLC. The top LED is green and the bottom LED is red.

Writing an input or holding register-based tag to the LEDs using the Copy tag to LED task controls the LEDs. See section ***7.9-Key Task Definitions*** for more information.

The top LED is controlled by the state of bit 0 in the tag and the value of the bottom LED is controlled by the state of the second bit in the tag.

3.2.1.3 Power Management Key

The Power Management key is used in conjunction with the power-saving mode and COM3 of the SCADAPack LP controller to control power to the SCADAPack Vision-10. Turning the

SCADAPack Vision-10 off reduces power consumption by approximately 100 mA. In low-power applications where power use is critical, this feature is very important.

SCADAPack Vision-10 power is turned on for five minutes when a momentary contact is made between pin 2 (DCD) and pin 3 (DTR) on the COM3 RJ-45 connector. The Power Management key makes this contact by momentarily shorting SCADAPack Vision-10 PLC port pin 1 to pin 4 when pressed. This permits the SCADAPack Vision or an HMI pushbutton to control HMI power. At each momentary contact, the five-minute power timer is reloaded. If the five-minute power timer is currently maintaining the SCADAPack Vision-10 power on, depressing the Power Management key for a two-second or longer period will turn off HMI power.

Connecting the SCADAPack Vision-10 to COM3 on the SCADAPack LP requires a special cable. Refer to ***Figure 10: SCADAPack Vision-10 PLC Port to SCADAPack LP Serial Port Connection*** for more information.

Note:	The SCADAPack LP must be in power-saving mode to utilize the Power Management key functionality.

3.2.1.4 Application keys

The Application keys are used to perform user-configurable actions either globally (for all screens), or locally (active screen only). The functionality of these keys is configured using the SCADAPack Vision configuration software. These functions include screen-navigation, data entry & data display.

3.2.1.5 Initialization Procedure

Initializing the SCADAPack Vision-10 erases the downloaded application and initializes the SCADAPack Vision-10 memory. To initialize the SCADAPack Vision-10:

- Remove power to the SCADAPack Vision-10,
- Press and hold the F1 and F6 keys simultaneously,
- Restore power to the SCADAPack Vision-10,
- Release the keys when the message “Initializing Memory…” message appears in the display. The initialization is complete when the “CMI VISION-10” message is displayed.

3.2.2 Back Panel

The back panel consists of two RS-232 serial ports identified as PLC Port and Serial Port. See ***Figure 6: SCADAPack Vision-10 Back Panel Layout***.

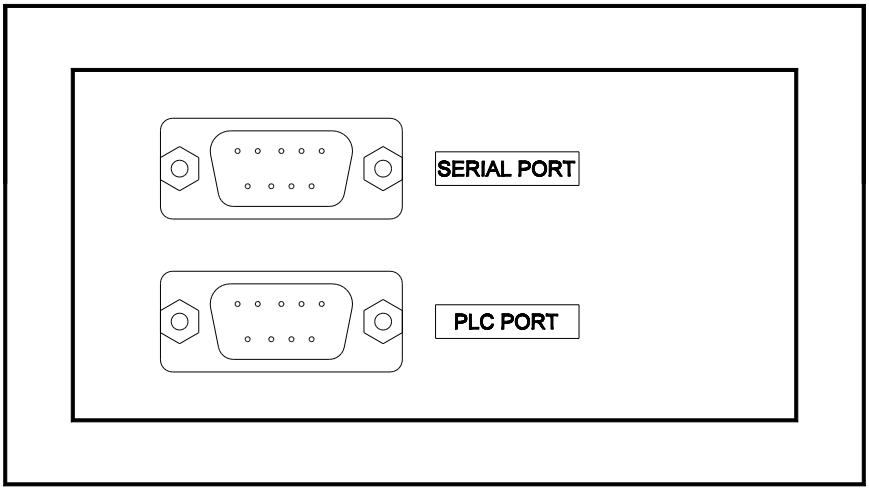


Figure 6: SCADAPack Vision-10 Back Panel Layout

Both RS-232 ports are 9-pin male D-sub-miniature (DE-9P) connectors configured as Data Terminal Equipment (DTE). A maximum cable length of 50 ft (15.2m) is allowed. All RS-232 wiring must use shielded cable. The shield should be connected to chassis ground at one point. The DE-9 connector shell is a good ground point.

3.2.2.1 PLC Port

The PLC Port is used to pass serial data between the SCADAPack Vision-10 and the PLC and to provide 5VDC to the SCADAPack Vision-10 from the PLC. See ***Figure 7: SCADAPack Vision-10 PLC Port Connections*** for the pin connections.

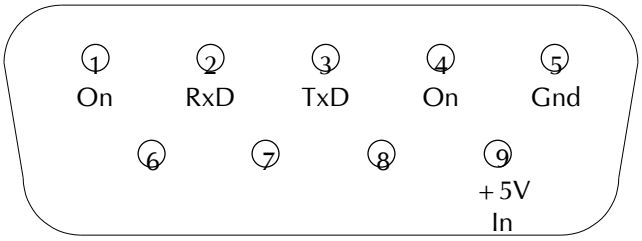


Figure 7: SCADAPack Vision-10 PLC Port Connections

In the following table a MARK is a voltage of +3 volts or greater; a SPACE is a voltage of –3 volts or less.

Pin	Type	Description
Pin 1 On		This pin is used by the SCADAPack LP to control power to the SCADAPack Vision-10.

Pin	Type	Description
Pin 2 RxD	Input	The level is SPACE on standby and MARK for received data. The RxD LED is lit for a MARK level.
Pin 3 TxD	Output	The level is SPACE on standby and MARK for transmitted data. The LED is lit for a MARK level.
Pin 4 On		This pin is used by the SCADAPack LP to control power to the SCADAPack Vision-10.
Pin 5 Ground		This pin is connected to the system ground.
Pin 6	N/A	Not used.
Pin 7	N/A	Not used.
Pin 8	N/A	Not used.
Pin 9	Input	This pin must be connected to the 5V-power supply of the PLC.

3.2.2.2 PLC Port Cables

To connect the SCADAPack Vision-10 PLC port to any PLC serial port, refer to the PLC hardware manual for serial port pin-out information, then use ***Figure 8: SCADAPack Vision-10 PLC Port to PLC Serial Port Connection*** as a guide to construct the appropriate cable.

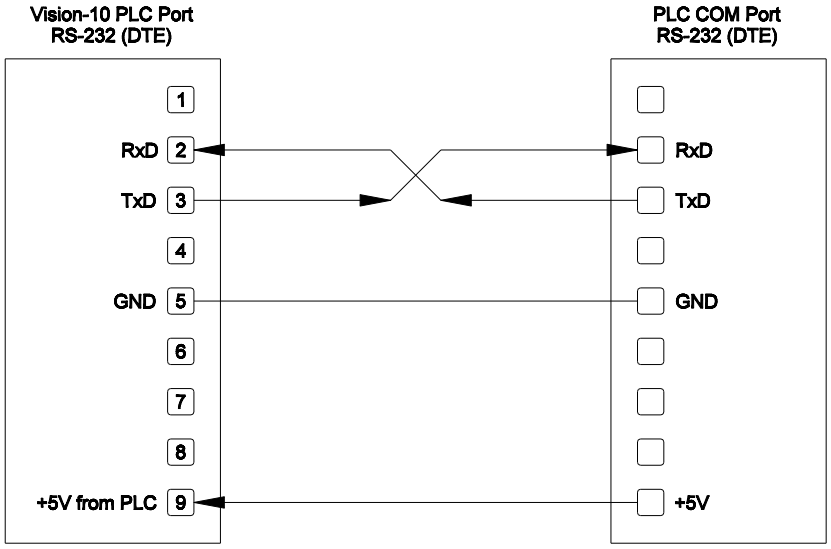


Figure 8: SCADAPack Vision-10 PLC Port to PLC Serial Port Connection

To connect the SCADAPack Vision-10 PLC port to a SCADAPack, SCADAPack LIGHT, SCADAPack PLUS or Micro 16 controller serial port, use ***Figure 9: SCADAPack Vision-10 PLC Port to SCADAPack Serial Port Connection*** as a guide to construct the appropriate cable. A 6-foot long cable is available from Control Microsystems as part number 297241.

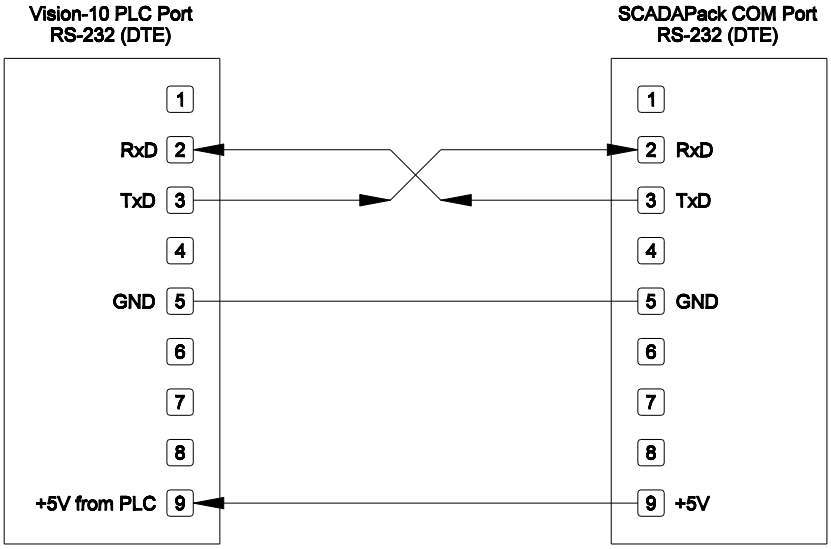


Figure 9: SCADAPack Vision-10 PLC Port to SCADAPack Serial Port Connection

To connect the SCADAPack Vision-10 PLC port to a SCADAPack LP controller serial port, use ***Figure 10: SCADAPack Vision-10 PLC Port to SCADAPack LP Serial Port Connection*** as a guide to construct the appropriate cable. A 5-foot long cable is available from Control Microsystems as part number 297237.

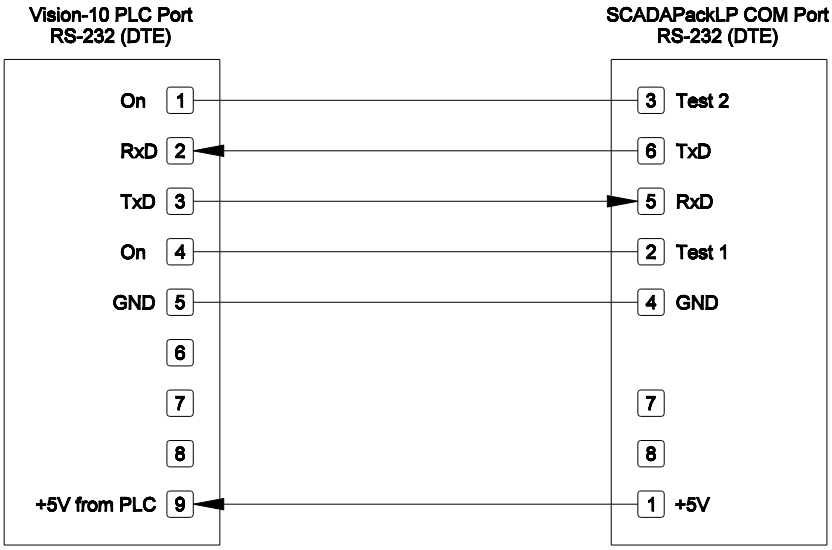


Figure 10: SCADAPack Vision-10 PLC Port to SCADAPack LP Serial Port Connection

To connect the SCADAPack Vision-10 PLC port to a SCADAPack 32 or SCADAPack 32P controller serial port, use ***Figure 11: SCADAPack Vision-10 to SCADAPack32 RJ-45 Serial Port***

Connector as a guide to construct the appropriate cable. A 5-foot long cable is available from Control Microsystems as part number 297237.

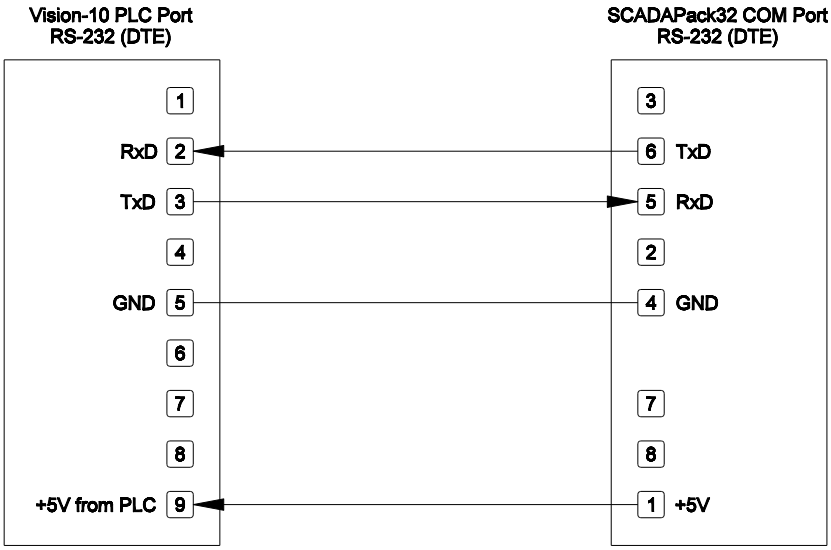


Figure 11: SCADAPack Vision-10 to SCADAPack32 RJ-45 Serial Port Connector

Note:	The above diagram represents the connection between the Vision 10 DB-9 connector to a SCADAPack32 RJ-45 connector on comm. ports 1, 2 and 4. To connect the Vision 10 to the SCADAPack 32's DB-9 connector on comm. 3, use ***Figure 9: SCADAPack Vision-10 PLC Port to SCADAPack Serial Port Connection***.

3.2.2.3 Serial Port

The Serial Port is used to upload/download SCADAPack Vision-10 configuration applications and download SCADAPack Vision-10 firmware from the computer serial port to the SCADAPack Vision-10. See ***Figure 12: SCADAPack Vision-10 Serial Port Connection*** for the pin connections.

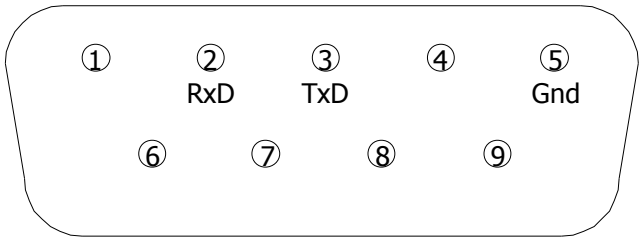


Figure 12: SCADAPack Vision-10 Serial Port Connection

In the following table a MARK is a voltage of +3 volts or greater; a SPACE is a voltage of –3 volts or less.

Pin	Type	Description
Pin 1	N/A	Not used.

Pin	Type	Description
Pin 2 RxD	Input	The level is SPACE on standby and MARK for received data. The RxD LED is lit for a MARK level.
Pin 3 TxD	Output	The level is SPACE on standby and MARK for transmitted data. The LED is lit for a MARK level.
Pin 4	N/A	Not used.
Pin 5 Ground		This pin is connected to the system ground.
Pin 6	N/A	Not used.
Pin 7	N/A	Not used.
Pin 8	N/A	Not used.
Pin 9	N/A	Not used.

3.2.2.4 Serial Port Cable

To connect the SCADAPack Vision-10 Serial port to a computer serial port, use ***Figure 13: SCADAPack Vision-10 Serial Port to Computer Serial Port Connection*** as a guide to construct the appropriate cable. A 5-foot long cable is available from Control Microsystems as part number 294055.

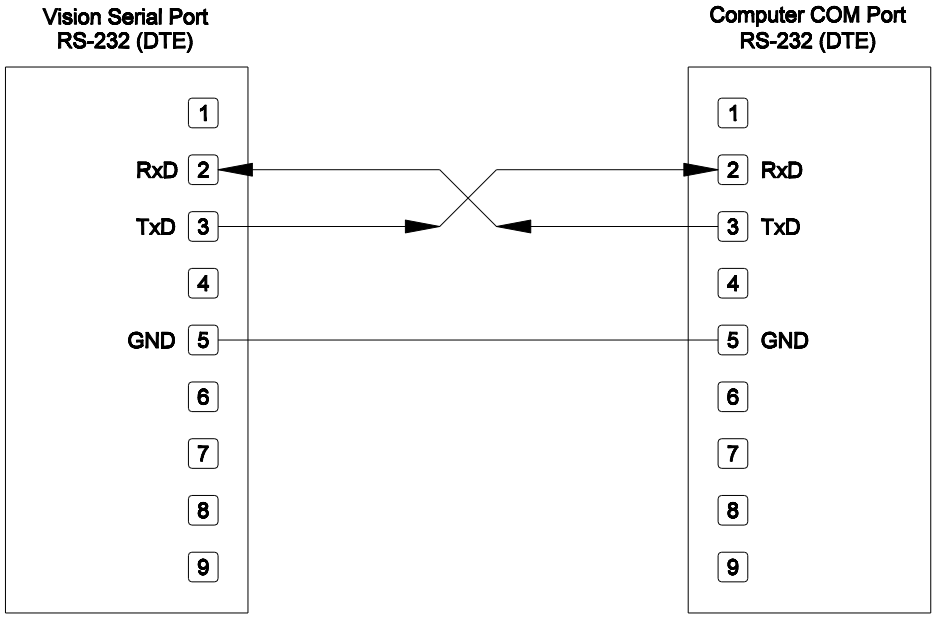


Figure 13: SCADAPack Vision-10 Serial Port to Computer Serial Port Connection

4 SCADAPack Vision-50

This section of the manual describes installation of the hardware and the hardware features of the SCADAPack Vision-50 Operator Interface as well as pin-outs for cables used to connect SCADAPack Vision-50 and PLC or computer.

4.1 SCADAPack Vision-50 Installation

Hardware installation of the SCADAPack Vision-50 requires cutting an opening into a panel cover or other suitable flat surface, and securing the SCADAPack Vision-50 to the cover with provided hardware.

Each mounting hardware kit contains one cardboard cutout template, one foam rubber gasket, two mounting screws, two plastic clamps and four hex nuts.

To mount the SCADAPack Vision-50 in the panel cover:

- Cut a 162.00mm x 76.00mm (1/8 DIN size) rectangular opening into the panel cover.
- Insert the SCADAPack Vision-50 into the foam rubber gasket.
- Insert the SCADAPack Vision-50/gasket assembly into the rectangular opening in the panel.
- Insert a mounting screw into the small circular hole in the clamp.
- Thread two hex nuts (touching together) onto the end of the mounting screw and pull the mounting screw head away from the clamp to seat the hex nuts into the hexagonal opening.
- Attach the clamp/screw assembly to the SCADAPack Vision-50 by inserting the two clamp hooks into the mounting holes on one side of the SCADAPack Vision-50 and pulling the clamp away from the panel to lock the clamp in place.
- Push the screw towards the front of the SCADAPack Vision-50 until it makes contact with the inside of the panel.
- Tighten screw to compress the gasket and secure the SCADAPack Vision-50 to the panel. Do not over-tighten.
- Repeat clamp/screw assembly and mounting procedure for opposite side of SCADAPack Vision-50.

See ***Figure 14: SCADAPack Vision-50 Panel Installation***.

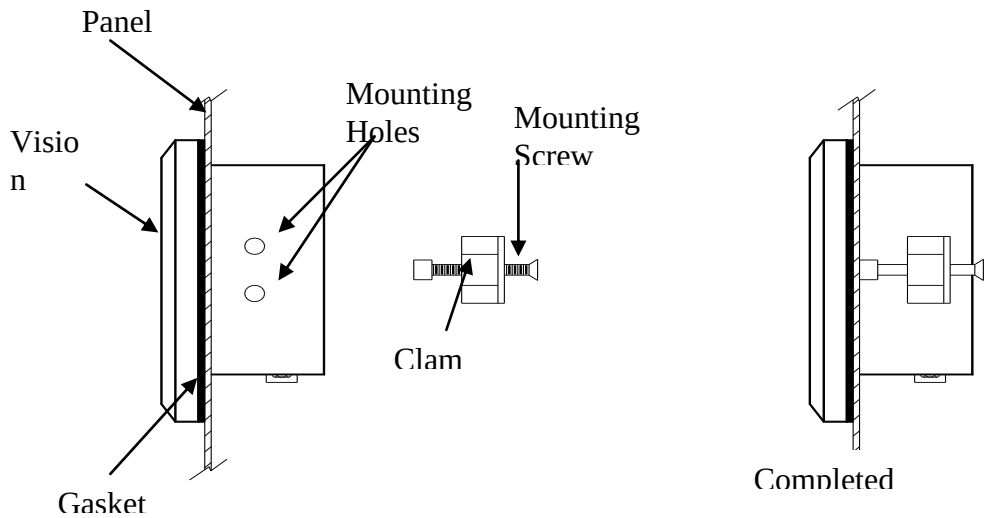


Figure 14: SCADAPack Vision-50 Panel Installation

The SCADAPack Vision-50 operator interface is made up of a front data-display panel and a back communication panel.

4.2 SCADAPack Vision-50 Reference

4.2.1 Front Panel

The front panel consists of an LCD screen, two output LEDs, one power key and six application keys. See ***Figure 15: SCADAPack Vision-50 Front Panel Layout***.

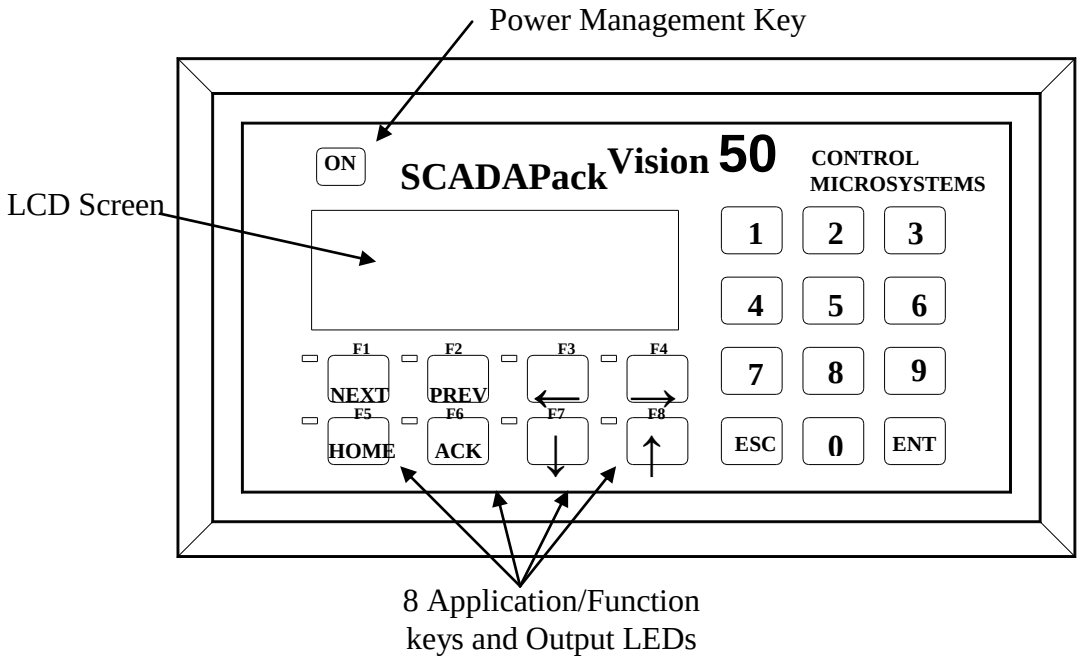


Figure 15: SCADAPack Vision-50 Front Panel Layout

4.2.1.1 LCD Screen

The LCD (Liquid Crystal Display) screen displays four lines of 20 characters for a maximum of 80 characters.

Data to be read from the PLC is displayed on this screen and is configured using the SCADAPack Vision configuration software.

Data to be entered by the operator and written to the PLC is also displayed on this screen and is configured using the SCADAPack Vision configuration software.

4.2.1.2 Output LEDs

Eight LEDs are used to display the status of single-bit addresses read from the PLC. All LEDs are red.

Writing an input or holding register-based tag to the LEDs using the Copy tag to LED task controls the LEDs. See ***7.9-Key Task Definitions*** for more information.

The first LED is controlled by the state of bit 0 second by the bit 1 and so forth to LED 8, which is controlled, by the state of the bit 7 in the tag.

4.2.1.3 Power Management Key

The Power Management key is used in conjunction with the power-saving mode and COM3 of the SCADAPack LP controller to control power to the SCADAPack Vision-50. Turning the SCADAPack Vision-50 off reduces power consumption by approximately 160 mA. In low-power applications where power use is critical, this feature is very important.

SCADAPack Vision-50 power is turned on for five minutes when a momentary contact is made between pin 2 (DCD) and pin 3 (DTR) on the COM3 RJ-45 connector. The Power Management key makes this contact by momentarily shorting SCADAPack Vision-50 PLC port pin 1 to pin 4 when pressed. This permits the SCADAPack Vision or an HMI pushbutton to control HMI power. At each momentary contact, the five-minute power timer is reloaded. If the five-minute power timer is currently maintaining the SCADAPack Vision-50 power on, depressing the Power Management key for a two-second or longer period will turn off HMI power.

Connecting the SCADAPack Vision-50 to COM3 on the SCADAPack LP requires a special cable. Refer to ***Figure 20: SCADAPack Vision-50 PLC Port to SCADAPack LP Serial Port Connection*** for more information.

Note:	The SCADAPack LP must be in power-saving mode to utilize the Power Management key functionality.

4.2.1.4 Application keys

The Application keys are used to perform user-configurable actions either globally (for all screens), or locally (active screen only). The functionality of these keys is configured using the SCADAPack Vision configuration software. These functions include screen-navigation, data entry & data display.

4.2.1.5 Initialization Procedure

Initializing the SCADAPack Vision-50 erases the previously downloaded application and initializes the SCADAPack Vision-50 memory. To initialize the SCADAPack Vision-50:

- Remove power to the SCADAPack Vision-50,
- Press and hold the F5[HOME] and ENT keys simultaneously,
- Restore power to the SCADAPack Vision-50,

Release the keys when the message “Initializing Memory…” message appears in the display. The initialization is complete when the “VISION-50” message is displayed.

4.2.2 Back Panel

The back panel consists of two RS-232 serial ports identified as PLC Port and Serial Port. See ***Figure 16: SCADAPack Vision-50 Back Panel Layout***.

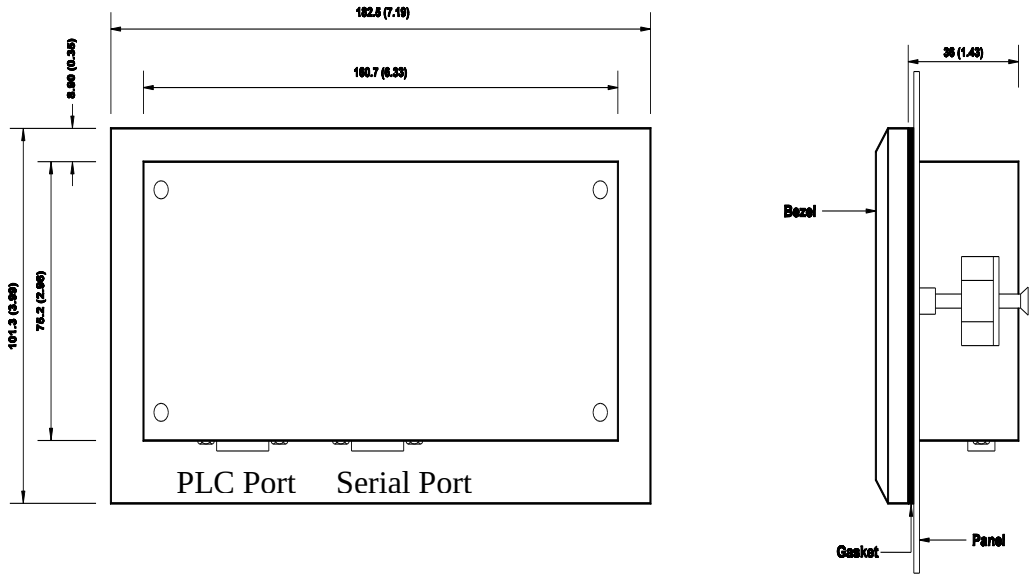


Figure 16: SCADAPack Vision-50 Back Panel Layout

Both RS-232 ports are 9-pin male D-sub-miniature (DE-9P) connectors configured as Data Terminal Equipment (DTE). A maximum cable length of 50ft (15.2m) is allowed. All RS-232 wiring must use shielded cable. The shield should be connected to chassis ground at one point. The DE-9 connector shell is a good ground point.

4.2.2.1 PLC Port

The PLC Port is used to pass serial data between the SCADAPack Vision-50 and the PLC and to provide 5VDC to the SCADAPack Vision-50 from the PLC. See ***Figure 17: SCADAPack Vision-50 PLC Port Connections*** for the pin connections.

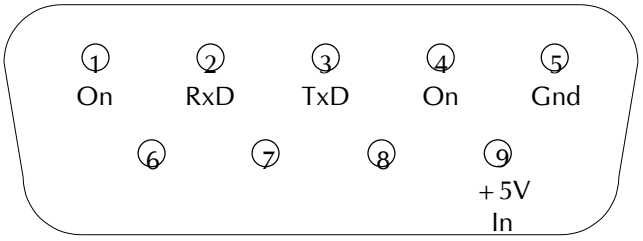


Figure 17: SCADAPack Vision-50 PLC Port Connections

In the following table a MARK is a voltage of +3 volts or greater; a SPACE is a voltage of –3 volts or less.

Pin	Type	Description
Pin 1 On		This pin is used by the SCADAPack LP to control power to the SCADAPack Vision-50.
Pin 2 RxD	Input	The level is SPACE on standby and MARK for received data. The RxD LED is lit for a MARK level.
Pin 3 TxD	Output	The level is SPACE on standby and MARK for transmitted data. The LED is lit for a MARK level.
Pin 4 On		This pin is used by the SCADAPack LP to control power to the SCADAPack Vision-50.
Pin 5 Ground		This pin is connected to the system ground.
Pin 6	N/A	Not used.
Pin 7	N/A	Not used.
Pin 8	N/A	Not used.
Pin 9	Input	This pin must be connected to the 5V-power supply of the PLC.

4.2.2.2 PLC Port Cables

To connect the SCADAPack Vision-50 PLC port to any PLC serial port, refer to the PLC hardware manual for serial port pin-out information, and then use ***Figure 18: SCADAPack Vision-50 PLC Port to PLC Serial Port Connection*** as a guide to construct the appropriate cable.

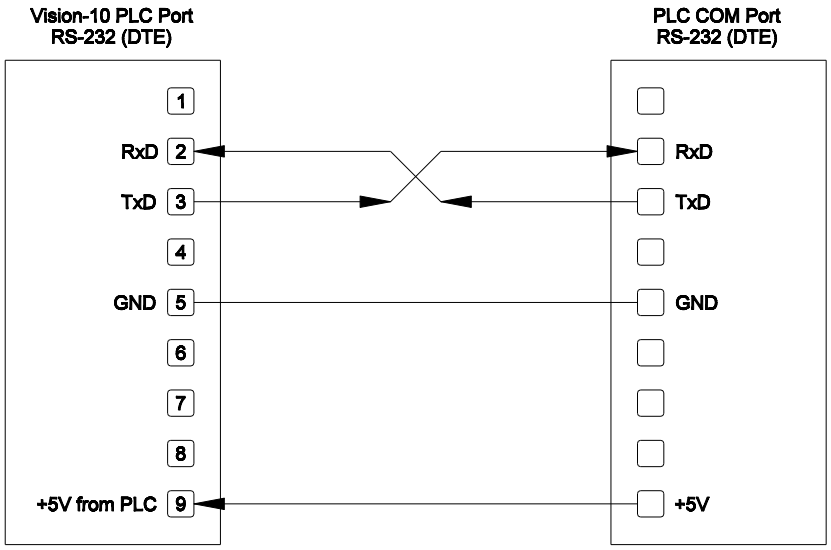


Figure 18: SCADAPack Vision-50 PLC Port to PLC Serial Port Connection

To connect the SCADAPack Vision-50 PLC port to a SCADAPack, SCADAPack LIGHT, SCADAPack PLUS or Micro 16 controller serial port, use ***Figure 19: SCADAPack Vision-50 PLC Port to SCADAPack Serial Port Connection*** as a guide to construct the appropriate cable. A 6-foot long cable is available from Control Microsystems as part number 297241.

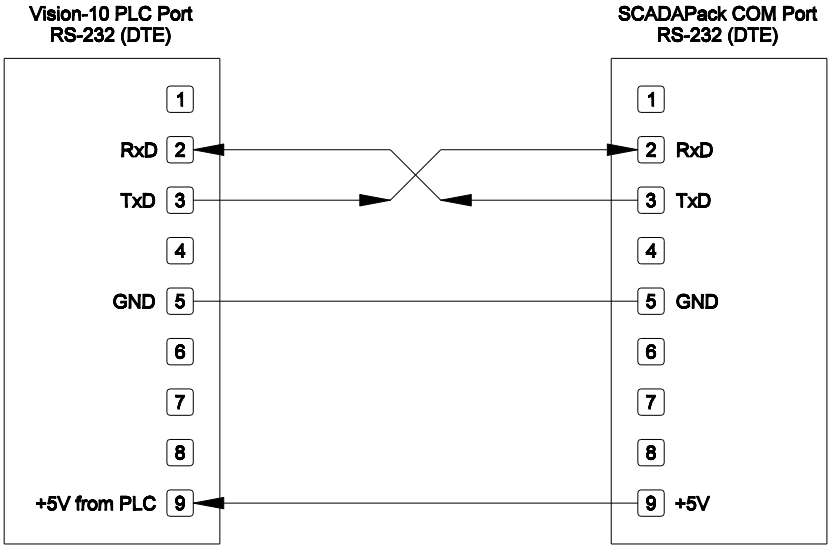


Figure 19: SCADAPack Vision-50 PLC Port to SCADAPack Serial Port Connection

To connect the SCADAPack Vision-50 PLC port to a SCADAPack LP controller serial port, use ***Figure 20: SCADAPack Vision-50 PLC Port to SCADAPack LP Serial Port Connection*** as a guide to construct the appropriate cable. A 5-foot long cable is available from Control Microsystems as part number 297237.

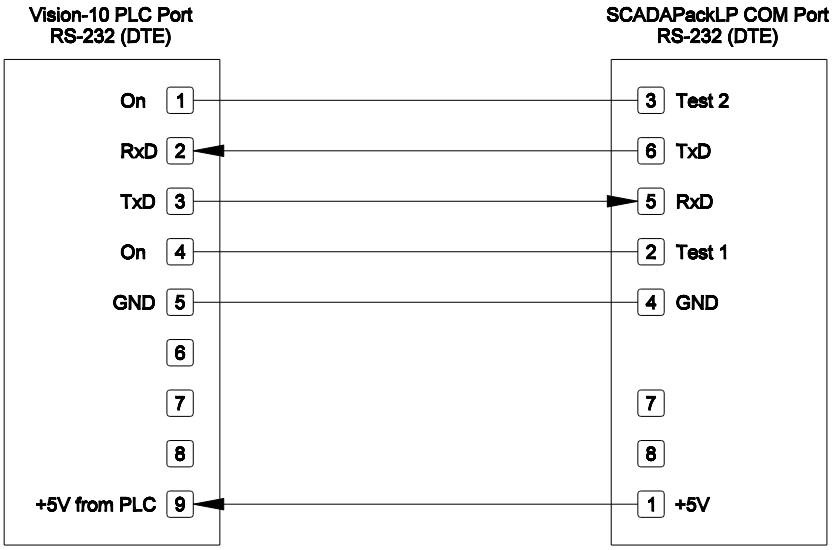


Figure 20: SCADAPack Vision-50 PLC Port to SCADAPack LP Serial Port Connection

To connect the SCADAPack Vision-50 PLC port to a SCADAPack 32 or SCADAPack 32P controller serial port, use ***Figure 21: SCADAPack Vision-50 to SCADAPack32 Serial Port***

Connection as a guide to construct the appropriate cable. A 5-foot long cable is available from Control Microsystems as part number 297237.

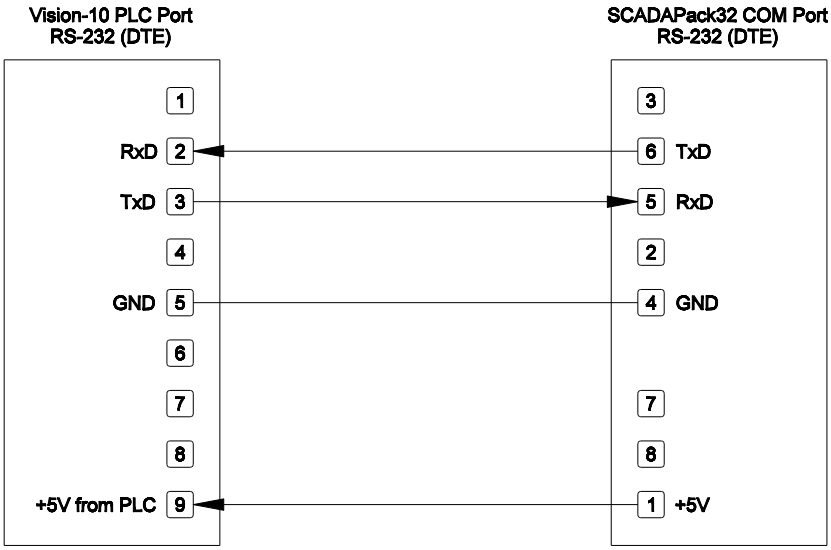


Figure 21: SCADAPack Vision-50 to SCADAPack32 Serial Port Connection

Note:	The above diagram represents the connection between the Vision 50 DB-9 connector to a SCADAPack32 RJ-45 connector on comm. ports 1, 2 and 4. To connect the Vision 50 to the SCADAPack 32's DB-9 connector on comm. 3, use ***Figure 9: SCADAPack Vision-10 PLC Port to SCADAPack Serial Port Connection***.

4.2.2.3 Serial Port

The Serial Port is used to upload/download SCADAPack Vision-50 configuration applications and download SCADAPack Vision-50 firmware from the computer serial port to the SCADAPack Vision-50. See ***Figure 22 SCADAPack Vision-50 Serial Port Connection*** for the pin connections.

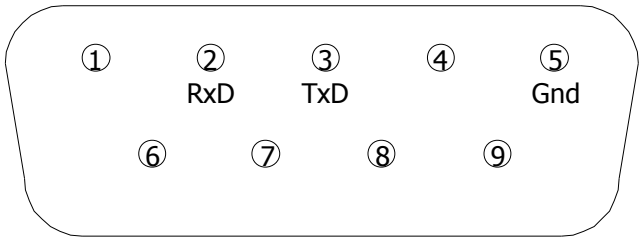


Figure 22 SCADAPack Vision-50 Serial Port Connection

In the following table a MARK is a voltage of +3 volts or greater; a SPACE is a voltage of –3 volts or less.

Pin	Type	Description
Pin 1	N/A	Not used.

Pin	Type	Description
Pin 2 RxD	Input	The level is SPACE on standby and MARK for received data. The RxD LED is lit for a MARK level.
Pin 3 TxD	Output	The level is SPACE on standby and MARK for transmitted data. The LED is lit for a MARK level.
Pin 4	N/A	Not used.
Pin 5 Ground		This pin is connected to the system ground.
Pin 6	N/A	Not used.
Pin 7	N/A	Not used.
Pin 8	N/A	Not used.
Pin 9	N/A	Not used.

4.2.2.4 Serial Port Cable

To connect the SCADAPack Vision-50 Serial port to a computer serial port, use ***Figure 23: SCADAPack Vision-50 Serial Port to Computer Serial Port Connection*** as a guide to construct the appropriate cable. A 5-foot long cable is available from Control Microsystems as part number 294055.

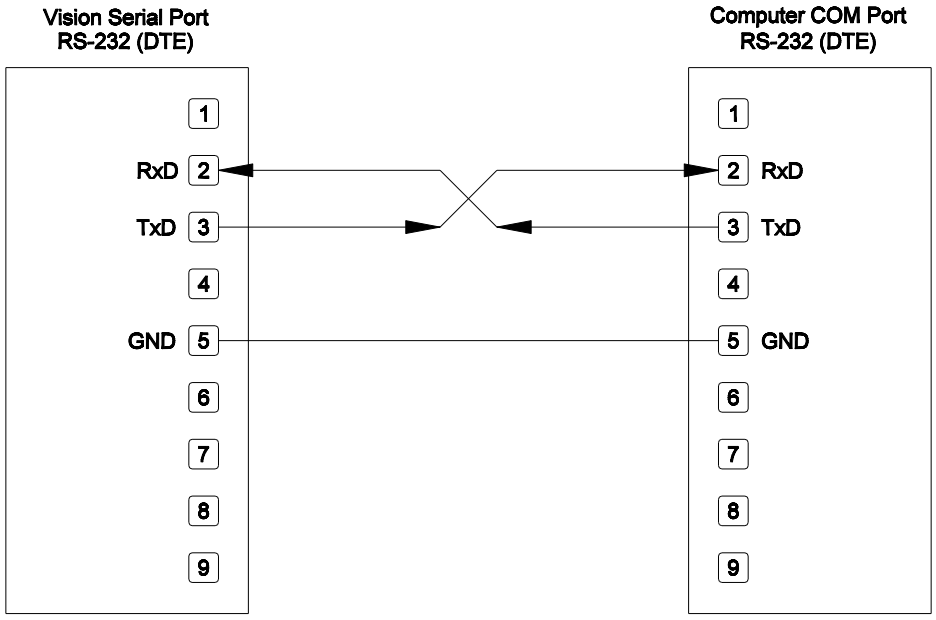


Figure 23: SCADAPack Vision-50 Serial Port to Computer Serial Port Connection

5 SCADAPack Vision-60

This section of the manual describes installation of the hardware and the hardware features of the SCADAPack Vision-60 Operator Interface as well as pin-outs for cables used to connect SCADAPack Vision-60 and PLC or computer.

5.1 SCADAPack Vision-60 Installation

Hardware installation of the SCADAPack Vision-60 requires cutting an opening into a panel cover or other suitable flat surface, and securing the SCADAPack Vision-60 to the cover with provided hardware.

Each mounting hardware kit contains one cardboard cutout template, one foam rubber gasket, two mounting screws, two plastic clamps and four hex nuts.

To mount the SCADAPack Vision-60 in the panel cover:

- Cut a 162.00mm x 76.00mm (1/8 DIN size) rectangular opening into the panel cover.
- Insert the SCADAPack Vision-60 into the foam rubber gasket.
- Insert the SCADAPack Vision-60/gasket assembly into the rectangular opening in the panel.
- Insert a mounting screw into the small circular hole in the clamp.
- Thread two hex nuts (touching together) onto the end of the mounting screw and pull the mounting screw head away from the clamp to seat the hex nuts into the hexagonal opening.
- Attach the clamp/screw assembly to the SCADAPack Vision-60 by inserting the two clamp hooks into the mounting holes on one side of the SCADAPack Vision-60 and pulling the clamp away from the panel to lock the clamp in place.
- Push the screw towards the front of the SCADAPack Vision-60 until it makes contact with the inside of the panel.
- Tighten screw to compress the gasket and secure the SCADAPack Vision-60 to the panel. Do not over-tighten.
- Repeat clamp/screw assembly and mounting procedure for opposite side of SCADAPack Vision-60.

See ***Figure 24: SCADAPack Vision-60 Panel Installation***.

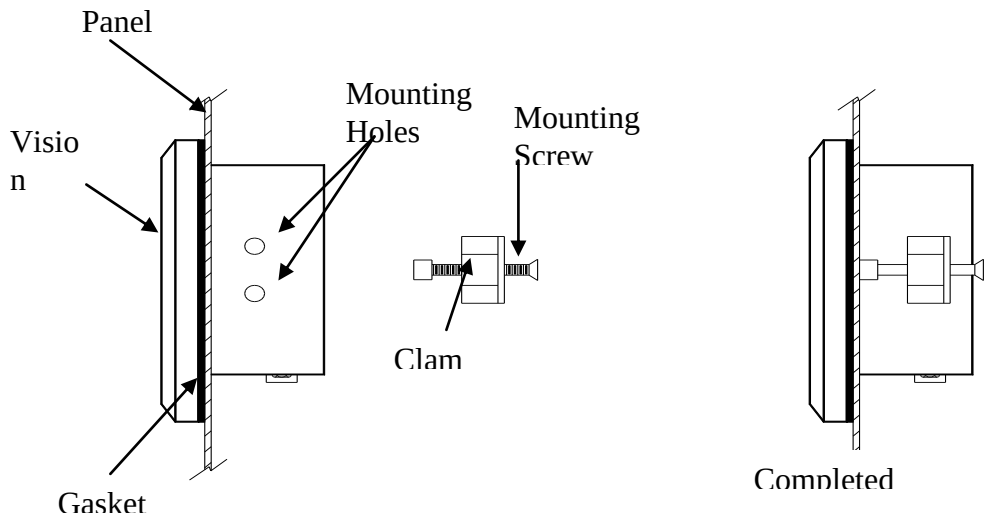


Figure 24: SCADAPack Vision-60 Panel Installation

The SCADAPack Vision-60 operator interface is made up of a front data-display panel and a back communication panel.

5.2 SCADAPack Vision-60 Reference

5.2.1 Front Panel

The front panel consists of an LCD screen, two output LEDs, one power key and six application keys. See ***Figure 25: SCADAPack Vision-60 Front Panel Layout***.

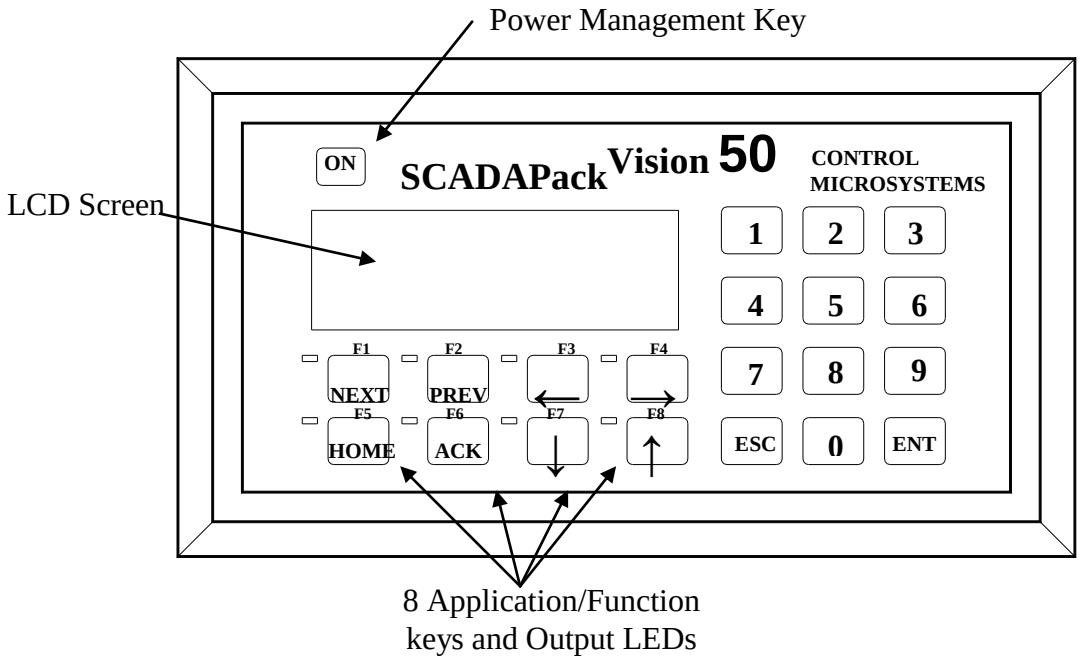


Figure 25: SCADAPack Vision-60 Front Panel Layout

5.2.1.1 LCD Screen

The LCD (Liquid Crystal Display) screen displays four lines of 20 characters for a maximum of 80 characters.

Data to be read from the PLC is displayed on this screen and is configured using the SCADAPack Vision configuration software.

Data to be entered by the operator and written to the PLC is also displayed on this screen and is configured using the SCADAPack Vision configuration software.

5.2.1.2 Output LEDs

Eight LEDs are used to display the status of single-bit addresses read from the PLC. All LEDs are red.

Writing an input or holding register-based tag to the LEDs using the Copy tag to LED task controls the LEDs. See ***7.9-Key Task Definitions*** for more information.

The first LED is controlled by the state of bit 0 second by the bit 1 and so forth to LED 8, which is controlled, by the state of the bit 7 in the tag.

5.2.1.3 Power Management Key

The Power Management key is used in conjunction with the power-saving mode and COM3 of the SCADAPack LP controller to control power to the SCADAPack Vision-60. Turning the SCADAPack Vision-60 off reduces power consumption by approximately 160 mA. In low-power applications where power use is critical, this feature is very important.

SCADAPack Vision-60 power is turned on for five minutes when a momentary contact is made between pin 2 (DCD) and pin 3 (DTR) on the COM3 RJ-45 connector. The Power Management key makes this contact by momentarily shorting SCADAPack Vision-60 PLC port pin 1 to pin 4 when pressed. This permits the SCADAPack Vision or an HMI pushbutton to control HMI power. At each momentary contact, the five-minute power timer is reloaded. If the five-minute power timer is currently maintaining the SCADAPack Vision-60 power on, depressing the Power Management key for a two-second or longer period will turn off HMI power.

Connecting the SCADAPack Vision-50 to COM3 on the SCADAPack LP requires a special cable. Refer to ***Figure 30: SCADAPack Vision-60 PLC Port to SCADAPack LP Serial Port Connection*** for more information.

Note:	The SCADAPack LP must be in power-saving mode to utilize the Power Management key functionality.

5.2.1.4 Application keys

The Application keys are used to perform user-configurable actions either globally (for all screens), or locally (active screen only). The functionality of these keys is configured using the SCADAPack Vision configuration software. These functions include screen-navigation, data entry & data display.

5.2.1.5 Initialization Procedure

Initializing the SCADAPack Vision-60 erases the previously downloaded application and initializes the SCADAPack Vision-50 memory. To initialize the SCADAPack Vision-60:

- Remove power to the SCADAPack Vision-60,
- Press and hold the F5[HOME] and ENT keys simultaneously,
- Restore power to the SCADAPack Vision-60,

Release the keys when the message “Initializing Memory…” message appears in the display. The initialization is complete when the “VISION-60” message is displayed.

5.2.2 Back Panel

The back panel consists of two RS-232 serial ports identified as PLC Port and Serial Port. See ***Figure 26: SCADAPack Vision-60 Back Panel Layout***.

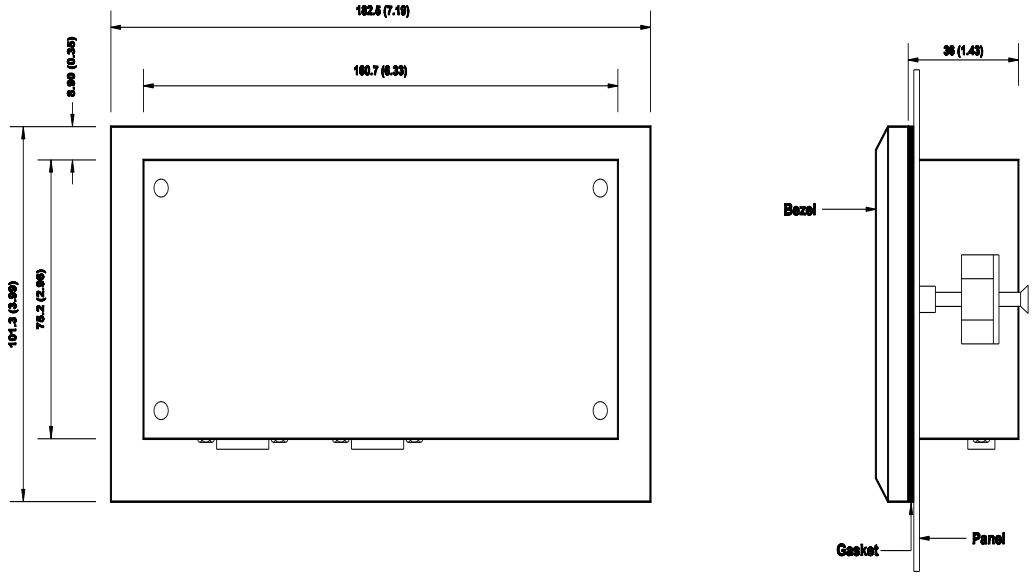


Figure 26: SCADAPack Vision-60 Back Panel Layout

Both RS-232 ports are 9-pin male D-sub-miniature (DE-9P) connectors configured as Data Terminal Equipment (DTE). A maximum cable length of 50ft (15.2m) is allowed. All RS-232 wiring must use shielded cable. The shield should be connected to chassis ground at one point. The DE-9 connector shell is a good ground point.

5.2.2.1 PLC Port

The PLC Port is used to pass serial data between the SCADAPack Vision-60 and the PLC and to provide 5VDC to the SCADAPack Vision-60 from the PLC. See ***Figure 27: SCADAPack Vision-60 PLC Port Connections*** for the pin connections.

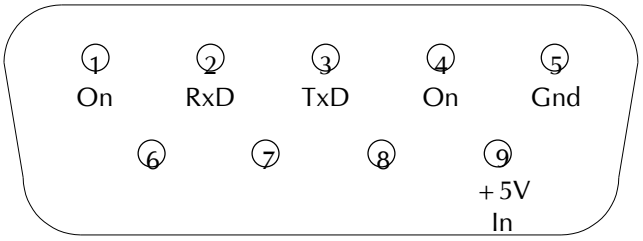


Figure 27: SCADAPack Vision-60 PLC Port Connections

In the following table a MARK is a voltage of +3 volts or greater; a SPACE is a voltage of –3 volts or less.

Pin	Type	Description
Pin 1 On		This pin is used by the SCADAPack LP to control power to the SCADAPack Vision-60.
Pin 2 RxD	Input	The level is SPACE on standby and MARK for received data. The RxD LED is lit for a MARK level.
Pin 3 TxD	Output	The level is SPACE on standby and MARK for transmitted data. The LED is lit for a MARK level.

Pin	Type	Description
Pin 4 On		This pin is used by the SCADAPack LP to control power to the SCADAPack Vision-60.
Pin 5 Ground		This pin is connected to the system ground.
Pin 6	N/A	Not used.
Pin 7	N/A	Not used.
Pin 8	N/A	Not used.
Pin 9	Input	This pin must be connected to the 5V-power supply of the PLC.

5.2.2.2 PLC Port Cables

To connect the SCADAPack Vision-60 PLC port to any PLC serial port, refer to the PLC hardware manual for serial port pin-out information, and then use ***Figure 28: SCADAPack Vision-60 PLC Port to PLC Serial Port Connection*** as a guide to construct the appropriate cable.

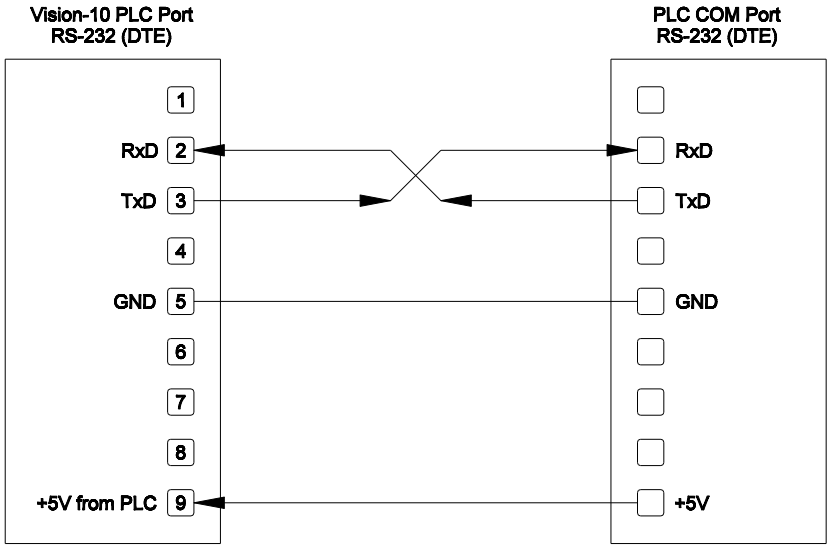


Figure 28: SCADAPack Vision-60 PLC Port to PLC Serial Port Connection

To connect the SCADAPack Vision-60 PLC port to a SCADAPack, SCADAPack LIGHT, SCADAPack PLUS or Micro 16 controller serial port, use ***Figure 29: SCADAPack Vision-60 PLC Port to SCADAPack Serial Port Connection*** as a guide to construct the appropriate cable. A 6-foot long cable is available from Control Microsystems as part number 297241.

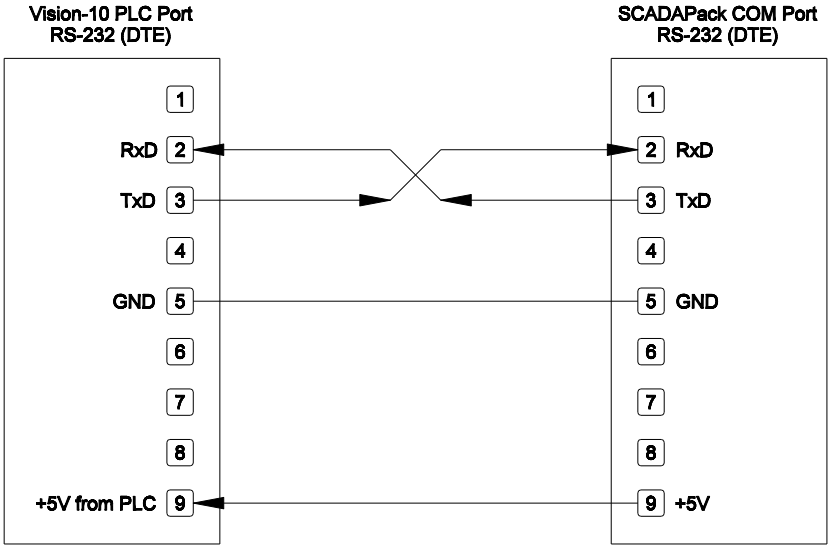


Figure 29: SCADAPack Vision-60 PLC Port to SCADAPack Serial Port Connection

To connect the SCADAPack Vision-60 PLC port to a SCADAPack LP controller serial port, use ***Figure 30: SCADAPack Vision-60 PLC Port to SCADAPack LP Serial Port Connection*** as a guide to construct the appropriate cable. A 5-foot long cable is available from Control Microsystems as part number 297237.

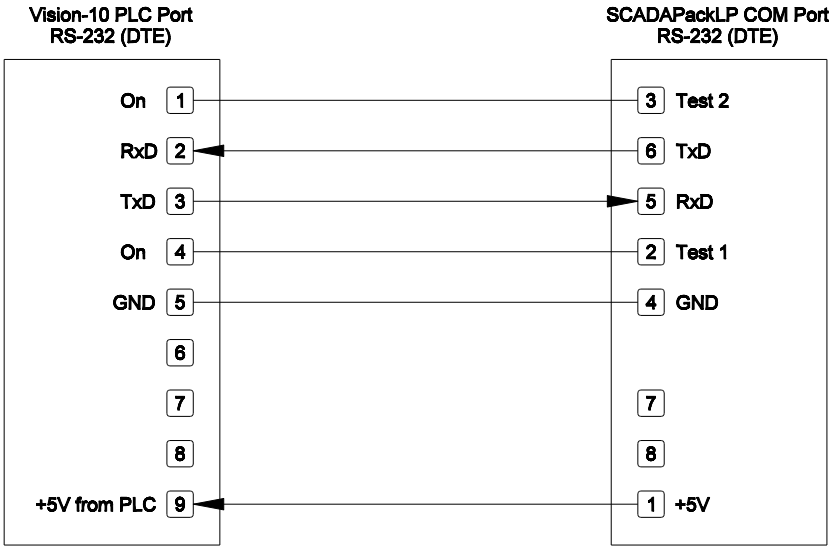


Figure 30: SCADAPack Vision-60 PLC Port to SCADAPack LP Serial Port Connection

To connect the SCADAPack Vision-60 PLC port to a SCADAPack 32 or SCADAPack 32P controller serial port, use ***Figure 31: SCADAPack Vision-60 to SCADAPack32 Serial Port***

Connection as a guide to construct the appropriate cable. A 5-foot long cable is available from Control Microsystems as part number 297237.

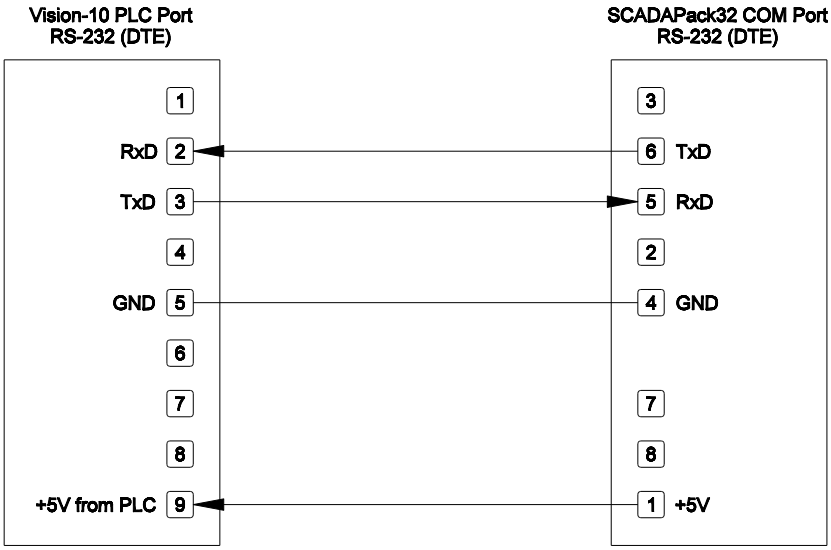


Figure 31: SCADAPack Vision-60 to SCADAPack32 Serial Port Connection

Note:	The above diagram represents the connection between the Vision-60 DB-9 connector to a SCADAPack32 RJ-45 connector on comm. ports 1, 2 and 4. To connect the Vision 50 to the SCADAPack 32's DB-9 connector on comm. 3, use ***Figure 9: SCADAPack Vision-10 PLC Port to SCADAPack Serial Port Connection***.

5.2.2.3 Serial Port

The Serial Port is used to upload/download SCADAPack Vision-60 configuration applications and download SCADAPack Vision-60 firmware from the computer serial port to the SCADAPack Vision-50. See ***Figure 32: SCADAPack Vision-60 Serial Port Connection*** for the pin connections.

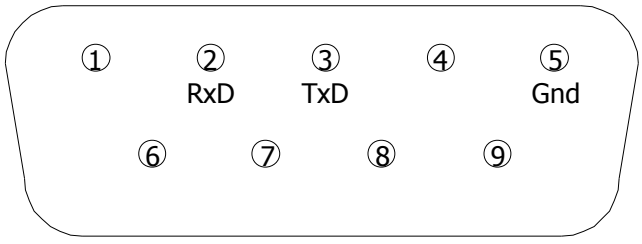


Figure 32: SCADAPack Vision-60 Serial Port Connection

In the following table a MARK is a voltage of +3 volts or greater; a SPACE is a voltage of –3 volts or less.

Pin	Type	Description
Pin 1	N/A	Not used.

Pin	Type	Description
Pin 2 RxD	Input	The level is SPACE on standby and MARK for received data. The RxD LED is lit for a MARK level.
Pin 3 TxD	Output	The level is SPACE on standby and MARK for transmitted data. The LED is lit for a MARK level.
Pin 4	N/A	Not used.
Pin 5 Ground		This pin is connected to the system ground.
Pin 6	N/A	Not used.
Pin 7	N/A	Not used.
Pin 8	N/A	Not used.
Pin 9	N/A	Not used.

5.2.2.4 Serial Port Cable

To connect the SCADAPack Vision-60 Serial port to a computer serial port, use ***Figure 33: SCADAPack Vision-60 Serial Port to Computer Serial Port Connection*** as a guide to construct the appropriate cable. A 5-foot long cable is available from Control Microsystems as part number 294055.

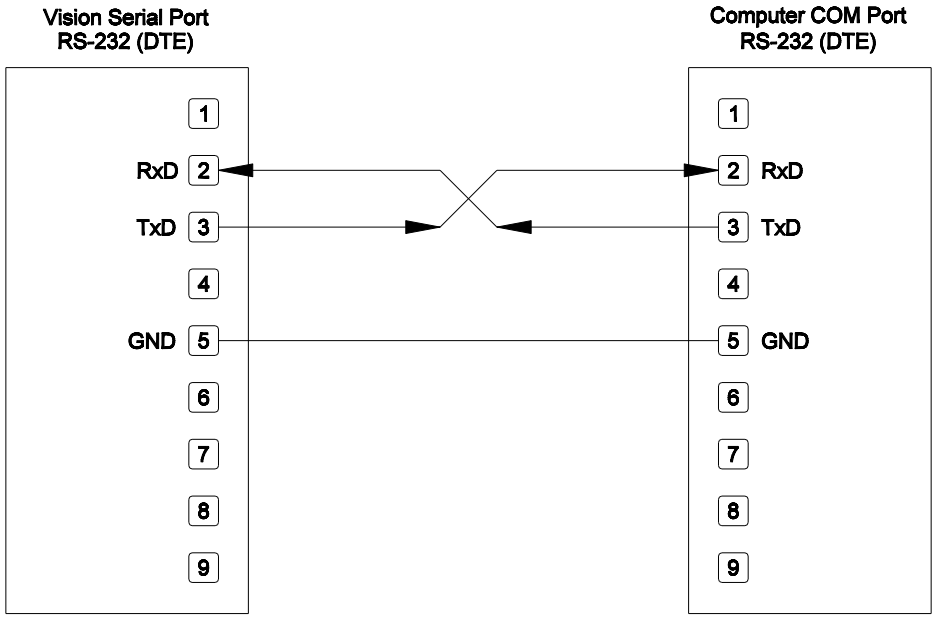


Figure 33: SCADAPack Vision-60 Serial Port to Computer Serial Port Connection

6 SCADAPack Vision Configuration Software

The SCADAPack Vision software is used to configure the SCADAPack Vision operator interface to display data read from the PLC and to allow operator-entered data to be written to the PLC.

This manual provides full documentation of the SCADAPack Vision configuration software. We strongly encourage you to read it, and to notify us if you find any errors or omissions that you feel should be included in our documentation.

Although communication with many different types of PLC is supported by the SCADAPack Vision, only the SCADAPack family of PLC will be dealt with in this manual.

To use the SCADAPack Vision configuration software, you need to install it on your system. The automated installation takes only a few minutes.

Some virus checking software may interfere with the installation. If you experience problems with the installation, disable the virus checker and try the installation again.

System Requirements

The minimum system configuration for the SCADAPack Vision software is:

- Microsoft Windows™ 9X/2000/ME/NT operating system.
- Mouse or compatible pointing device.
- Hard disk with approximately 2.0 MB of free disk space.

Installation on a Hard Disk

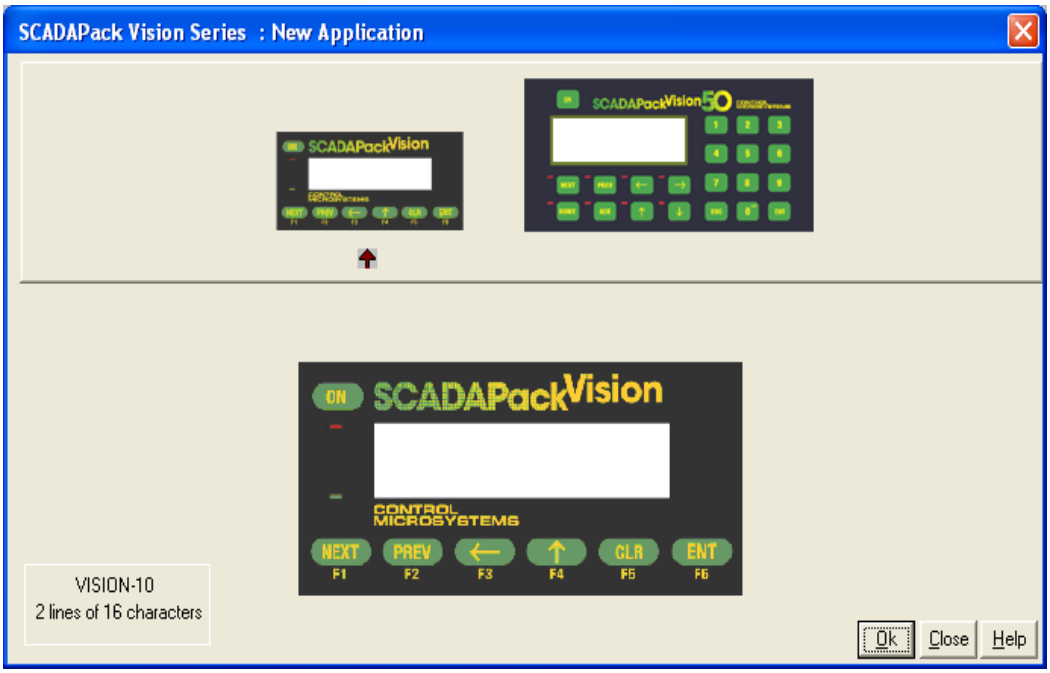
To install the SCADAPack Vision Configuration software:

- Insert the SCADAPack Vision setup CD into the CD ROM drive.
- From the *Windows Program Manager File* menu choose *Run*.
- From the Run dialog box select *Browse* and select the setup.exe file in the Vision folder on the CD.
- Follow the setup directions on the screen.

Running SCADAPack Vision Software

To run the SCADAPack Vision software:

- In the Vision group of the Program Manager, double click on the Vision icon.
- If you running SCADAPack Vision Configuration software first time or you opening new application, following screen will be displayed.



To select type of the display to be configured, click on one of SCADAPack Vision-10, SCADAPack Vision-50 SCADAPack Vision-60 or icons in the screen displayed above.

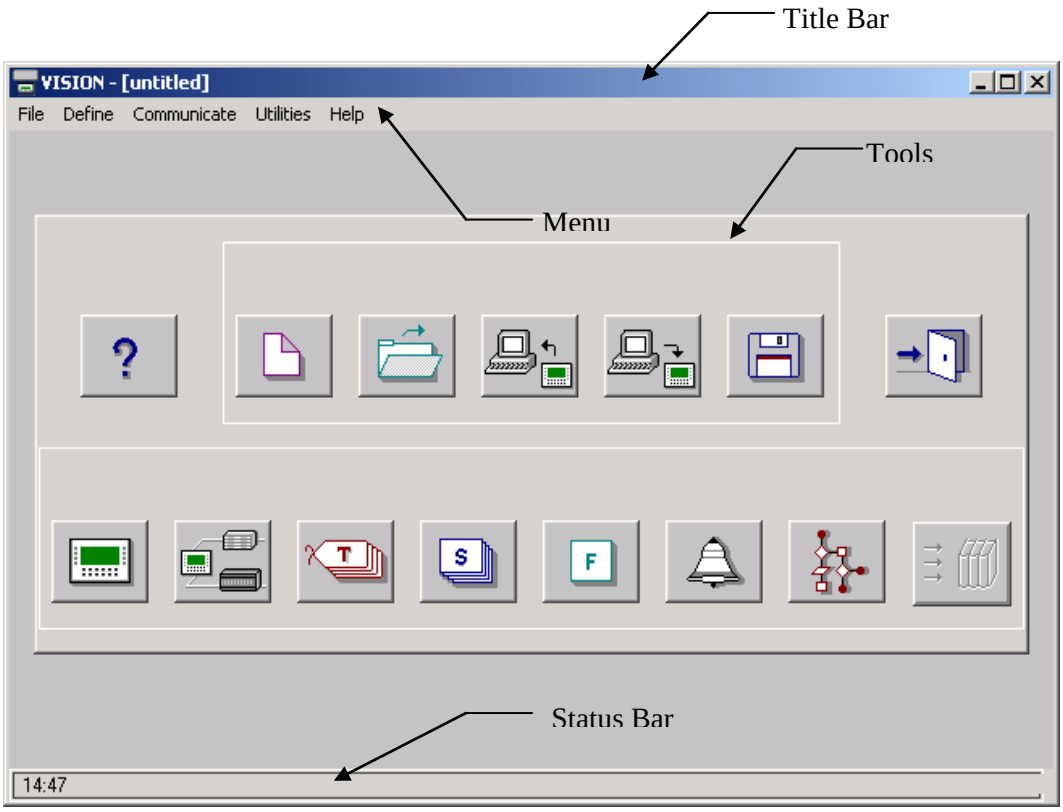
6.1 SCADAPack Vision Configuration Software Environment

This section of the manual outlines the features of the SCADAPack Vision configuration software. A full description of the software is given in the SCADAPack Vision Configuration Software Reference section of the manual.

The user is encouraged to read the following sections to gain an understanding of the many programming features available.

6.1.1 SCADAPack Vision Configuration Software Display

The SCADAPack Vision Configuration software is shown below.



6.1.1.1 Title Bar

The title bar displays the SCADAPack Vision title and the name of the currently open SCADAPack Vision configuration file. The file name area is blank if there is no file in use or if the file is new and has not yet been saved.

6.1.1.2 Menu Bar

The menu bar displays the programming, editing and utility functions available within the configuration software. Menu commands can be displayed by clicking the mouse cursor on the menu item or by pressing the “alt” concurrently with the underlined letter of the menu item. Pressing a particular keyboard function key may also activate certain menu commands. The alternate function keys are listed beside the menu command.

6.1.1.3 Tool Bar

The tool bar contains buttons for commonly used commands.

Help:

Opens the online help file. This is the same as the *Index [F1]* command in the *Help* menu.

New File:

Resets the SCADAPack Vision configuration software and opens a new file. This is the same as the *New* command in the *File* menu.

Open File:

Opens an existing SCADAPack Vision configuration file. This is the same as the *Open* command in the *File* menu.

Upload Application:

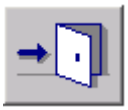
Reads (uploads) the SCADAPack Vision application file from the SCADAPack Vision operator interface into the computer. This is the same as the *Upload* command in the *Communicate* menu.

Download Application:

Writes (downloads) the SCADAPack Vision application file to the SCADAPack Vision operator interface. This is the same as the *Download* command in the *Communicate* menu.

Save File:

Saves the currently open configuration file. This is the same as the *Save [F2]* command in the *File* menu.

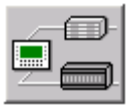


Exit Application:

Exits the SCADAPack Vision configuration software. This is the same as the *Exit [Alt+F4]* command in the *File* menu.

Vision Settings:

Defines the SCADAPack Vision memory, keypad, and floating point variable format settings. This is the same as the *Settings [F3]* command in the *Define* menu.



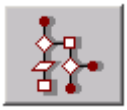
Network Configuration: Defines the Modbus station address for the SCADAPack Vision and the PLC. This is the same as the *Network Configuration [F4]* command in the *Define* menu.

Tags: Defines tags in the tag database. This is the same as the *Tag Database [F5]* command in the *Define* menu.

Screens: Defines the data display screens. This is the same as the *Screens [F6]* command in the *Define* menu.

Global Keys: Defines global key functionality. This is the same as the *Global Key [F7]* command from the *Define* menu.

Alarms: Defines alarms. This is the same as the *Alarms [F8]* command in the *Define* Menu.



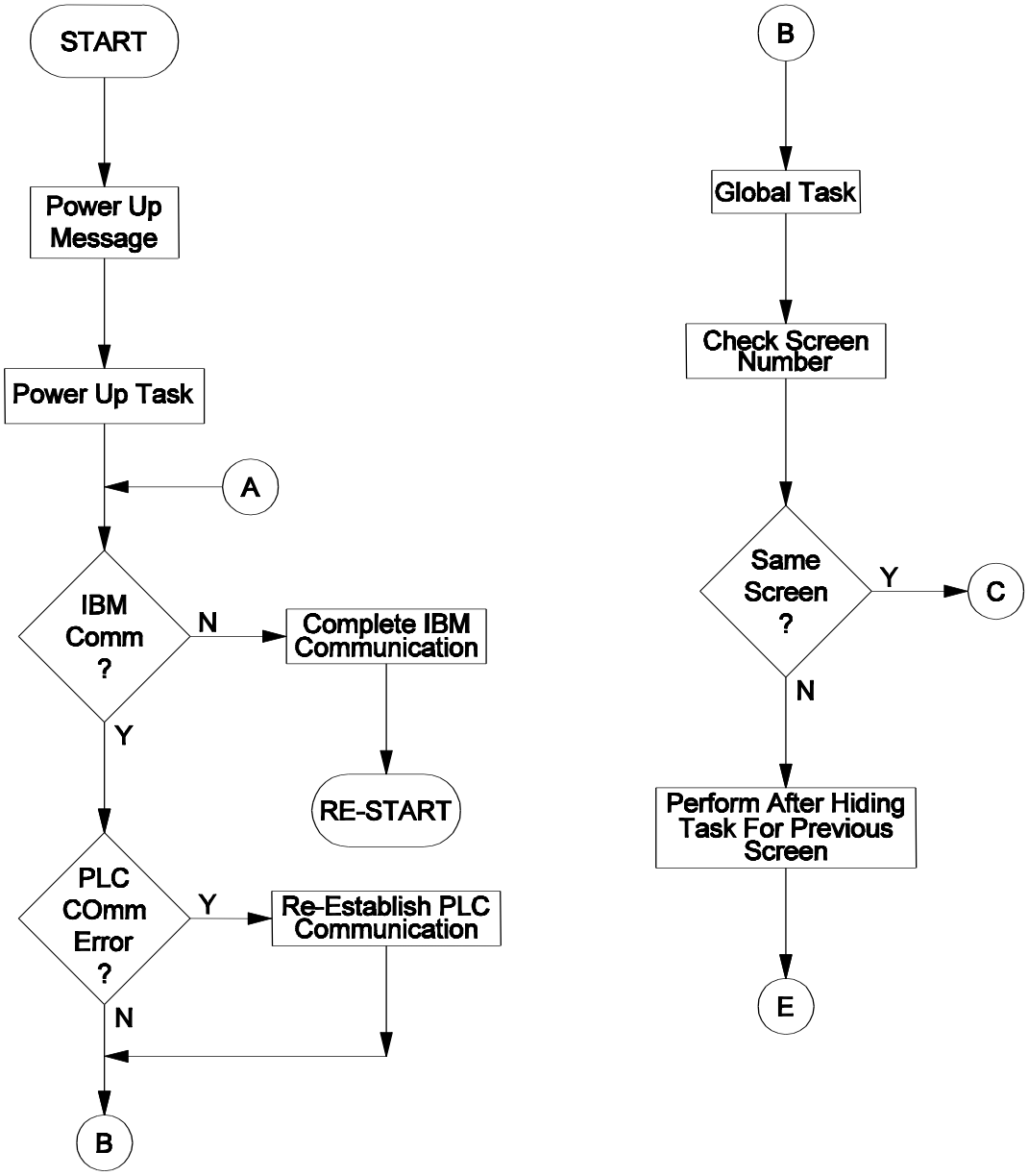
Application Task Lists: Defines application tasks. This is the same as the *Application Tasklists [F9]* command in the *Define* menu.

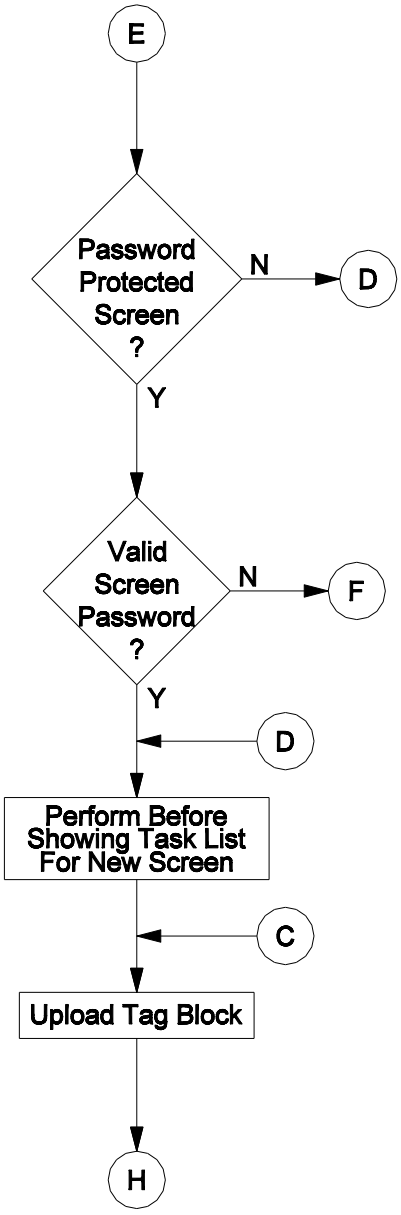
6.1.1.4 Status Bar

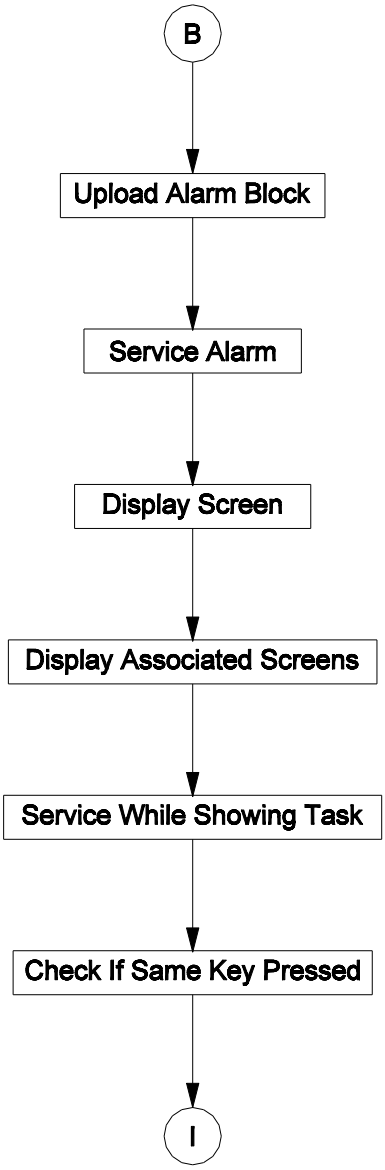
The status bar displays the computer-based time and a brief description of a toolbar command if the mouse cursor is pointed at the command button.

6.1.2 Task Sequence Algorithm

The SCADAPack Vision follows a particular sequence for performing the tasks as defined by the user. Please refer to ***Figure 34: Task Sequence Algorithm*** for more information.


START
Power Up Message
Power Up Task
A
IBM Comm ?
N
Complete IBM Communication
Y
RE-START
PLC COmm Error ?
Y
Re-Establish PLC Communication
N
B
B
Global Task
Check Screen Number
Same Screen ?
Y
C
N
Perform After Hiding Task For Previous Screen
E


E
Password Protected Screen ?
N
D
Y
Valid Screen Password ?
N
F
Y
D
Perform Before Showing Task List For New Screen
C
Upload Tag Block
H


B
Upload Alarm Block
Service Alarm
Display Screen
Display Associated Screens
Service While Showing Task
Check If Same Key Pressed
I

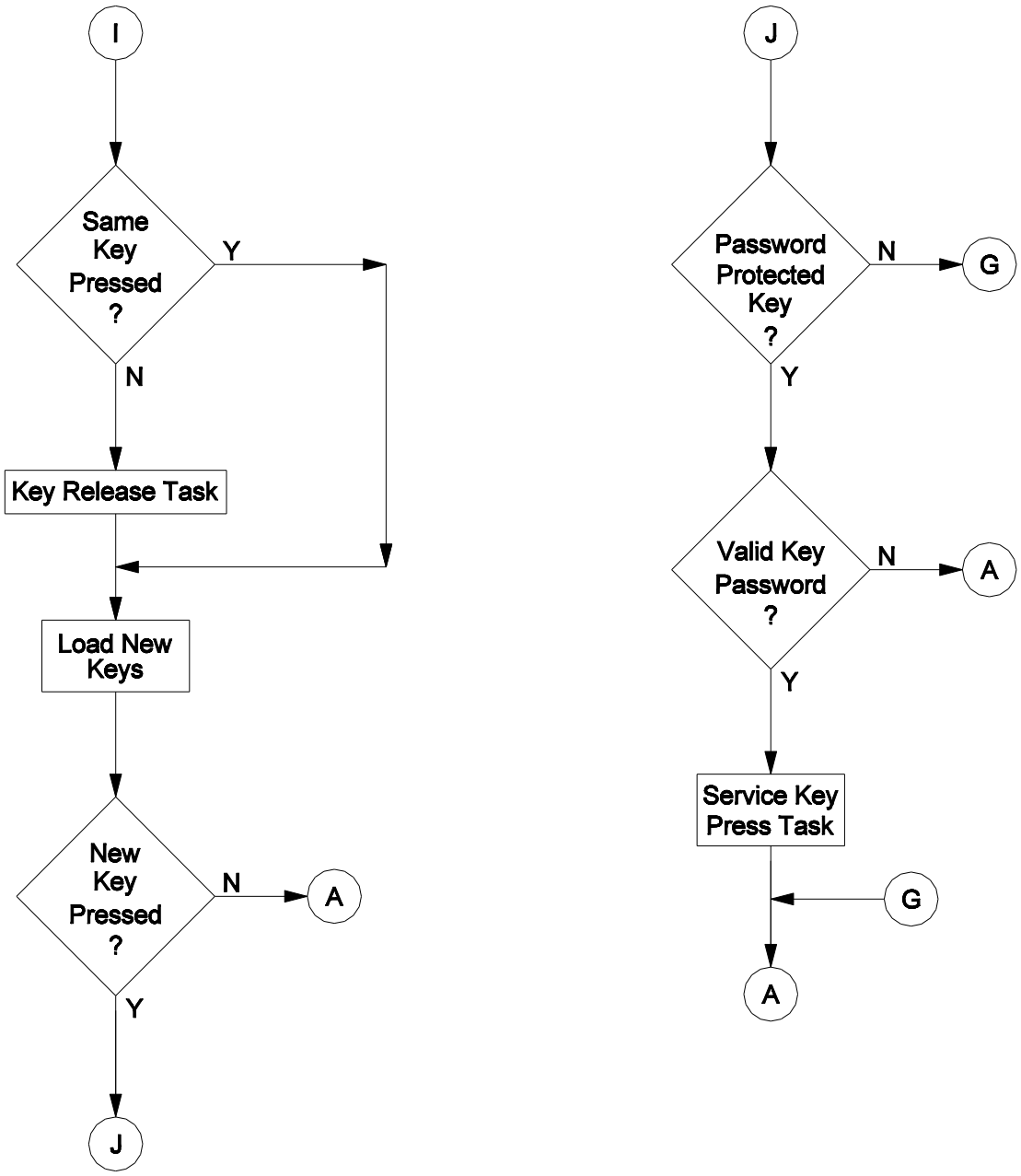


Figure 34: Task Sequence Algorithm

6.1.3 SCADAPack Vision-10 Initialization

Initializing the SCADAPack Vision-10 erases the downloaded application and initializes the SCADAPack Vision-10 memory. To initialize the SCADAPack Vision-10:

- Remove power to the SCADAPack Vision-10,
- Press and hold the F1 and F6 keys simultaneously,
- Restore power to the SCADAPack Vision-10,

Release the keys when the message "Initializing Memory…" message appears in the display. The initialization is complete when the "CMI VISION-10" message is displayed.

If application download is interrupted, the boot-loader could be corrupted. Boot-loader can be recovered by following this procedure:

- Remove power to the SCADAPack Vision.
- Press and hold the F1, F3 and F5 keys simultaneously and firmly.
- Restore power to the SCADAPack Vision.
- Keeping the keys pressed for at least three seconds, wait until a blank screen appears (yellow backlight without characters). This screen may contain spurious data on the upper LCD line.
- Release all the three keys.
- Press F2 within 15 seconds.
- After approximately 10 seconds remove power to the SCADAPack Vision.
- Restore power to the SCADAPack Vision. It should now contain only the boot-loader. The unit should now accept the firmware download.

6.1.4 SCADAPack Vision-50 Initialization

Initializing the SCADAPack Vision-50 erases the previously downloaded application and initializes the SCADAPack Vision-50 memory. To initialize the SCADAPack Vision-50:

- Remove power to the SCADAPack Vision-50,
- Press and hold the F5[HOME] and ENT keys simultaneously,
- Restore power to the SCADAPack Vision-50,

Release the keys when the message "Initializing Memory…" message appears in the display. The initialization is complete when the "VISION-50" message is displayed.

If application download is interrupted, the boot-loader could be corrupted. Boot-loader can be recovered by following this procedure:

- Remove power to the SCADAPack Vision-50.
- Press and hold the F5[HOME], F6 [ACK] and F7[Up-arrow] keys simultaneously and firmly.
- Restore power to the SCADAPack Vision-50.
- Keeping the keys pressed for at least three seconds, wait until a blank screen appears (yellow backlight without characters). This screen may contain spurious data on the upper LCD line.
- Release all the three keys.

- Press F1[NEXT] within 15 seconds.
- After approximately 10 seconds remove power to the SCADAPack Vision-50.
- Restore power to the SCADAPack Vision-50. It should now contain only the boot-loader. The unit should now accept the firmware download.

6.1.5 SCADAPack Vision-60 Initialization

Initializing the SCADAPack Vision-60 erases the previously downloaded application and initializes the SCADAPack Vision-50 memory. To initialize the SCADAPack Vision-60:

- Remove power to the SCADAPack Vision-60,
- Press and hold the F5[HOME] and ENT keys simultaneously,
- Restore power to the SCADAPack Vision-60,

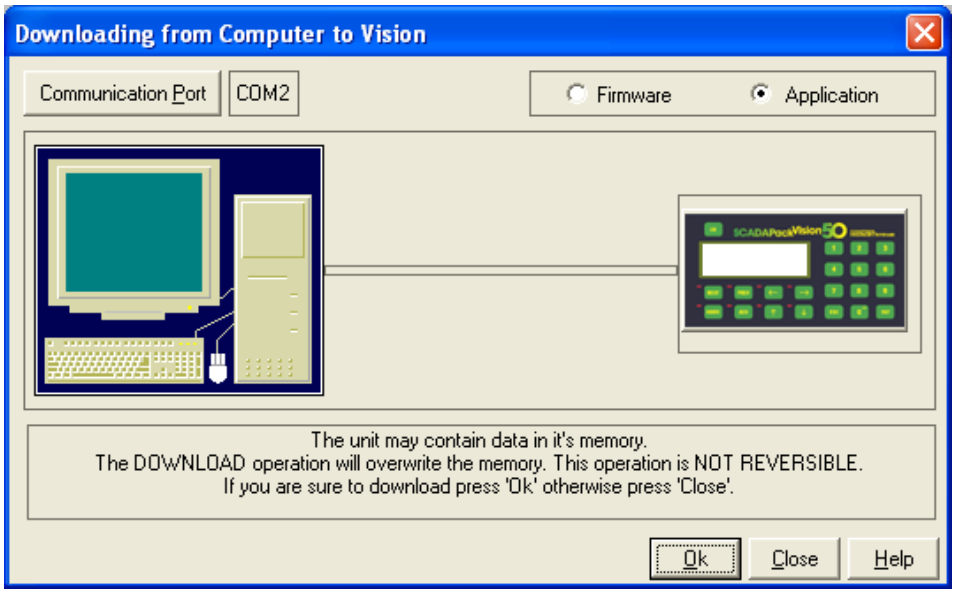
Release the keys when the message "Initializing Memory…" message appears in the display. The initialization is complete when the "VISION-60" message is displayed.

If application download is interrupted, the boot-loader could be corrupted. Boot-loader can be recovered by following this procedure:

- Remove power to the SCADAPack Vision-60.
- Press and hold the F5[HOME], F6 [ACK] and F7[Up-arrow] keys simultaneously and firmly.
- Restore power to the SCADAPack Vision-60.
- Keeping the keys pressed for at least three seconds, wait until a blank screen appears (yellow backlight without characters). This screen may contain spurious data on the upper LCD line.
- Release all the three keys.
- Press F1[NEXT] within 15 seconds.
- After approximately 10 seconds remove power to the SCADAPack Vision-60.
- Restore power to the SCADAPack Vision-50. It should now contain only the boot-loader. The unit should now accept the firmware download.

6.1.6 Application and Firmware Download

The Download command opens the Downloading from Computer to SCADAPack Vision dialog.


Downloading from Computer to Vision
Communication Port
COM2
Firmware
Application
The unit may contain data in it's memory.
The DOWNLOAD operation will overwrite the memory. This operation is NOT REVERSIBLE.
If you are sure to download press 'Ok' otherwise press 'Close'.
Ok
Close
Help

This dialog is used to write the currently open application file or firmware to the SCADAPack Vision.

The *Communication Port* command opens the *Communication Port* dialog. This is the same as the *Communication Port* command in the *Communicate* menu.

Selecting the *Firmware* radio button downloads the firmware file, located in the \Vision\drivers\ subdirectory, to the SCADAPack Vision when the *Ok* command is selected. The firmware file has the file extension ".abs". Downloading firmware overwrites existing firmware in the SCADAPack Vision.

If communication is disrupted during the firmware download procedure, the SCADAPack Vision display will appear blank. Waiting 30 seconds or cycling power to the SCADAPack Vision is required before attempting to download the firmware again. If the SCADAPack Vision still does not respond to the firmware download, the boot-loader may have been corrupted. However, it may still be recoverable by following this procedure:

SCADAPack Vision-10 firmware erase procedure:

- Remove power to the SCADAPack Vision-10.
- Press and hold the F1, F3 and F5 keys simultaneously and firmly.
- Restore power to the SCADAPack Vision-10.
- Keeping the keys pressed for at least three seconds, wait until a blank screen appears (yellow backlight without characters). This screen may contain spurious data on the upper LCD line.
- Release all the three keys.
- Press F2 within 15 seconds.
- After approximately 10 seconds remove power to the SCADAPack Vision-10.
- Restore power to the SCADAPack Vision-10. It should now contain only the boot-loader. The unit should now accept the firmware download.

SCADAPack Vision-50 firmware erase procedure:

- Remove power to the SCADAPack Vision-50.
- Press and hold the F5[HOME], F6 [ACK] and F7[Up-arrow] keys simultaneously and firmly.
- Restore power to the SCADAPack Vision-50.
- Keeping the keys pressed for at least three seconds, wait until a blank screen appears (yellow backlight without characters). This screen may contain spurious data on the upper LCD line.
- Release all the three keys.
- Press F1[NEXT] within 15 seconds.
- After approximately 10 seconds remove power to the SCADAPack Vision-50.
- Restore power to the SCADAPack Vision-50. It should now contain only the boot-loader. The unit should now accept the firmware download.

SCADAPack Vision-60 firmware erase procedure:

- Remove power to the SCADAPack Vision-60.
- Press and hold the F5[HOME], F6 [ACK] and F7[Up-arrow] keys simultaneously and firmly.
- Restore power to the SCADAPack Vision-60.
- Keeping the keys pressed for at least three seconds, wait until a blank screen appears (yellow backlight without characters). This screen may contain spurious data on the upper LCD line.
- Release all the three keys.
- Press F1[NEXT] within 15 seconds.
- After approximately 10 seconds remove power to the SCADAPack Vision-60.
- Restore power to the SCADAPack Vision-60. It should now contain only the boot-loader. The unit should now accept the firmware download.

Selecting the *Application* radio button downloads the currently open application file to the SCADAPack Vision when the *Ok* command is selected. Downloading an application erases the application in the SCADAPack Vision.

Download progress is indicated with a red line that moves from the computer graphic to the SCADAPack Vision-10.

The *Ok* command downloads (writes) either the firmware or application file from the computer to the SCADAPack Vision depending on the radio button selection.

The *Close* command closes the dialog.

The *Help* command displays the on-line help for the dialog.

6.2 SCADAPack Vision-10 Program Development

This section of the manual is organized in a manner that will lead the new user through the steps required to create a SCADAPack Vision-10 configuration file and download the file to the SCADAPack Vision-10 operator interface. It is recommended that new users follow the steps outlined in this section.

- Open SCADAPack Vision Software
- Create New Configuration File
- Configure Network Configuration
- Configure Tags
- Configure Screens
- Configure Application Task List
- Save the Configuration file
- Download Configuration File to SCADAPack Vision-10
- Connect SCADAPack Vision-10 to PLC

The SCADAPack Vision-10 operator interface displays PLC register data and provides operators with the ability to write data to the PLC. A SCADAPack Vision configuration file must be created and downloaded to the SCADAPack Vision-10 operator interface in order to utilize the SCADAPack Vision-10 operator interface.

The SCADAPack Vision configuration that will be created in this example procedure will contain four display screens, each containing data elements for the four supported data types.

This section of the manual assumes that you have configured a SCADAPack Series PLC (or similar) to be polled as a Modbus slave by the SCADAPack Vision-10.

The SCADAPack Vision Configuration section contains detailed explanations for all the commands and functions described in this section.

In addition to this section, the on-line help for the SCADAPack Vision program contains a complete reference for the program. To display on-line help, select the *Index* command from the *Help* menu.

Follow the steps outlined below to configure the SCADAPack Vision-10 and download the file to the operator interface.

6.2.1 Open SCADAPack Vision Software

From the *START* | *PROGRAMS* | *Vision* menu, select the SCADAPack Vision icon to open the configuration software and select SCADAPack Vision-10 to be configured.

6.2.2 Create New Configuration File

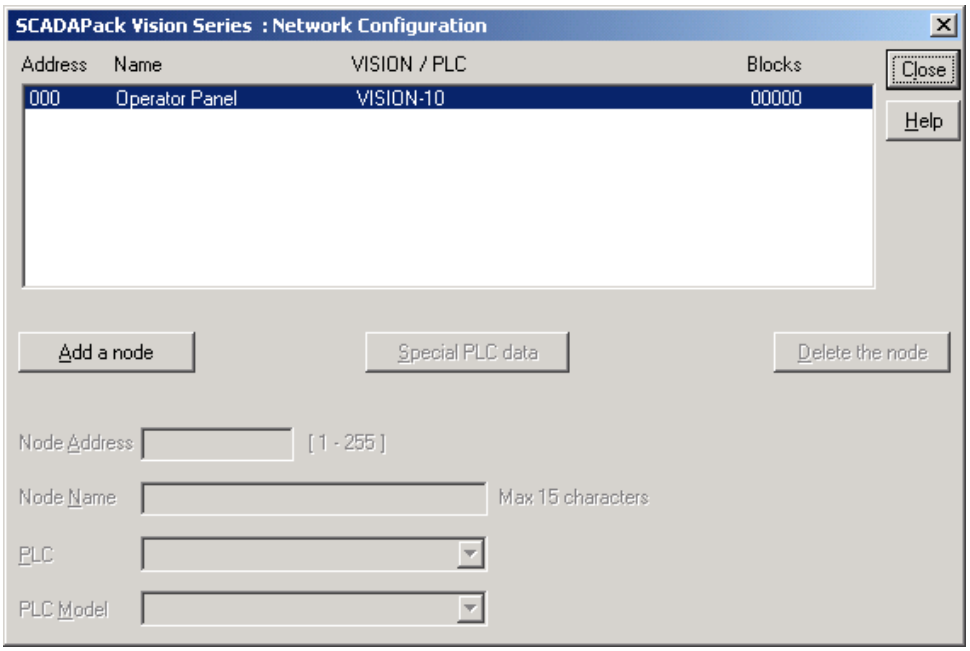
From the *File* menu, select *New*. A graphic of the SCADAPack Vision is displayed.

Select SCADAPack Vision-10 icon to choose the SCADAPack Vision-10 and close the dialog.

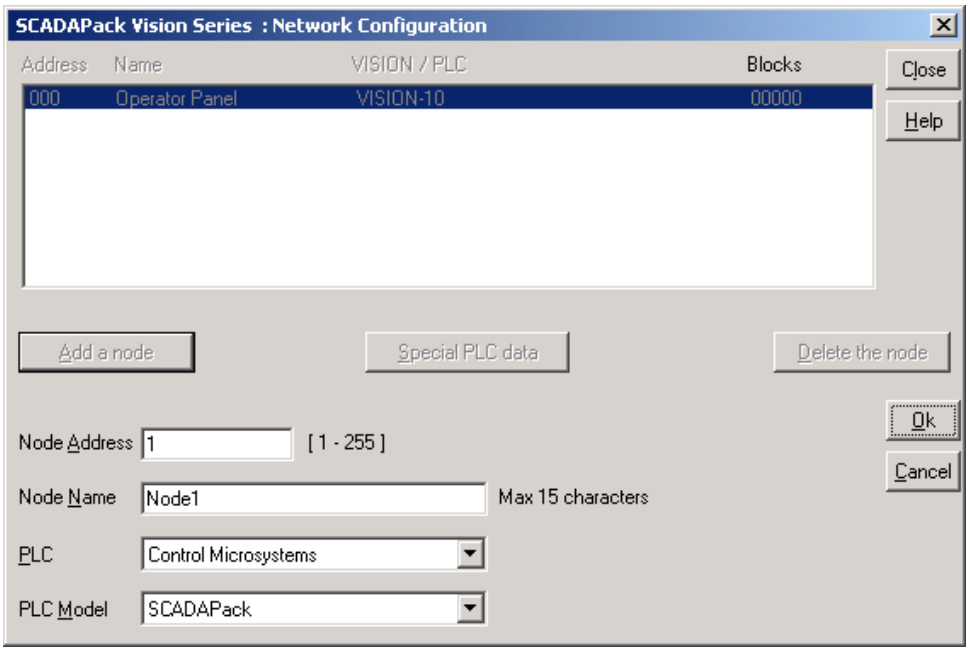
6.2.3 Configure Network Configuration

The Network Configuration dialog is used to identify the PLC with which the SCADAPack Vision will communicate.

- From the *Define* menu, select *Network Configuration*. The following dialog appears:



- Select the *Add a node* button. The four data entry fields are filled as follows:



The settings that are displayed configure the SCADAPack Vision-10 to communicate with a SCADAPack Series controller, station address 1.

- Select *Ok* to accept these settings and close the dialog.

- Select the *Close* button to accept the Network Configuration settings and close the dialog.

6.2.4 Configure Tags

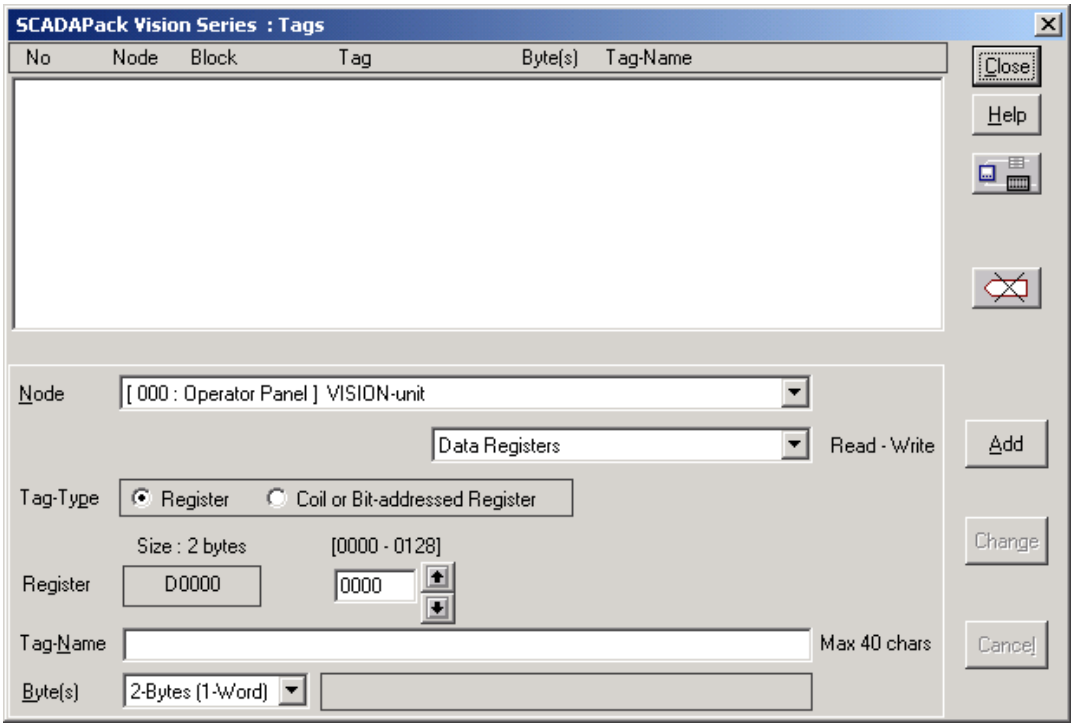
A "Tag" is an identifying name given to each data point that is to be read from or written to the PLC.

The four types of SCADAPack PLC data registers supported by the SCADAPack Vision-10 are:

- Coils, (SCADAPack 0XXXX series)
- Input status, (SCADAPack 1XXXX series)
- Input registers, (SCADAPack 3XXXX series) and
- Holding registers (SCADAPack 4XXXX series).

To configure tags:

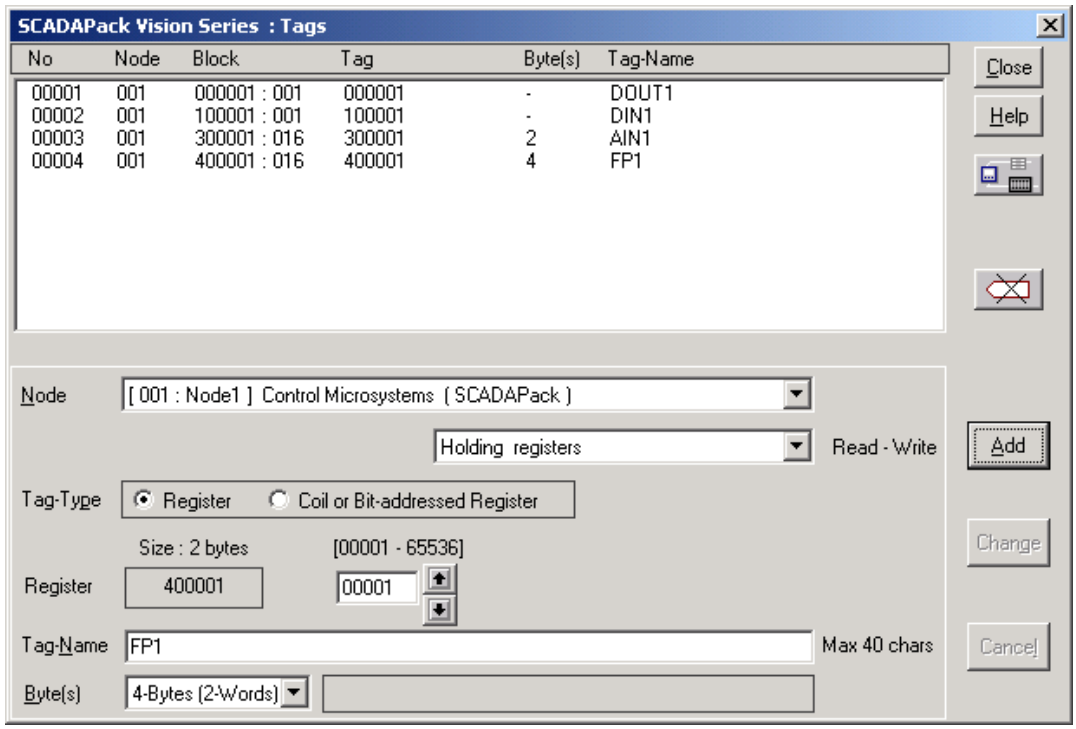
- From the *Define* menu, select the *Tag Database* command. The following dialog appears:



- In the *Node* data field, select the "[001 : Node1] Control Microsystems (SCADAPack)" entry. This action allows for the configuration of tags related to the IO database addresses found in the SCADAPack PLC.
- With "Coils" displayed in the *Read-Write* data field, and "00001" displayed in the *[00001 – 65536]* field, enter "DOUT1" in the *Tag-Name* field.
- Select the *Add* button. A tag named "DOUT1" is created which is associated with the SCADAPack IO database address 00001. The tag is displayed in the tag list at the top of the dialog.
- Select "Input Status" in the *Read-Write* data field.
- With "00001" displayed in the *[00001 – 65536]* field, enter "DIN1" in the *Tag-Name* field.

- Select the *Add* button. A tag named “DIN1” is created which is associated with the SCADAPack IO database address 10001.
- Select “Input Registers” in the *Read-Write* data field.
- With “00001” displayed in the *[00001 – 65536]* field, the *Register Tag-Type* radio button selected, and “2-Bytes (1-word)” displayed in the *Byte(s)* field, enter “AIN1” in the *Tag-Name* field.
- Select the *Add* button. A tag named “AIN1” is created which is associated with the SCADAPack IO database address 30001.
- Select “Holding Registers” in the *Read-Write* data field.
- Select “4-Bytes (2-words)” in the *Byte(s)* field.
- With “00001” displayed in the *[00001 – 65536]* field and the *Register Tag-Type* radio button selected, enter “FP1” in the *Tag-Name* field.
- Select the *Add* button. A tag named “FP1” is created which is associated with the SCADAPack IO database addresses 40001 and 40002.

When completed, the *Tags* dialog should appear like this:



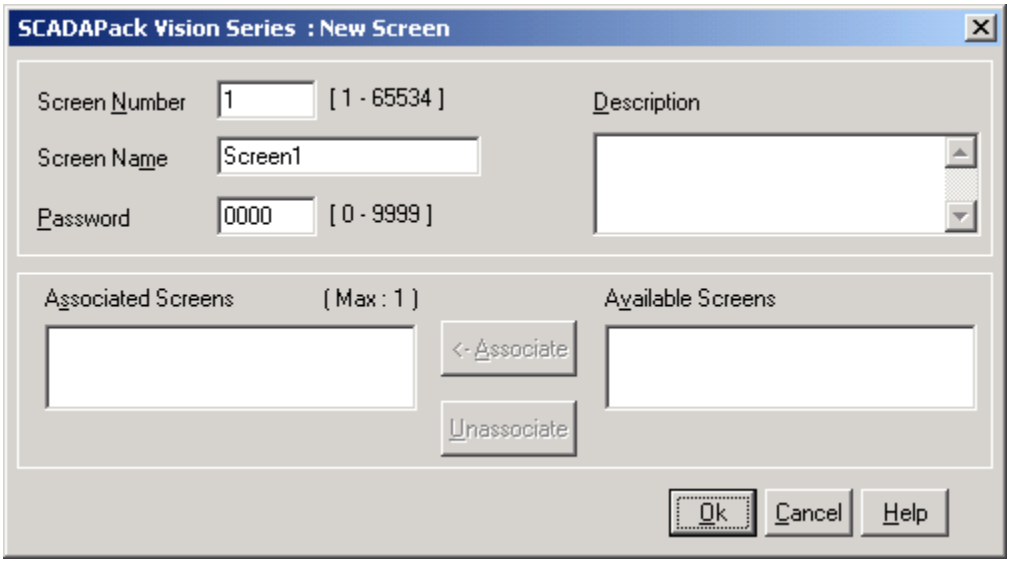
- Select the *Close* button to save the configured tags and close the dialog.

6.2.5 Configure Screens

PLC data associated with tags is displayed on the SCADAPack Vision-10’s LCD by configuring “screens”. Up to 65354 screens, each displaying up to thirty-two characters on two lines, can be configured. Scrolling through these screens and entering data is accomplished by configuring action-buttons related to a particular screen.

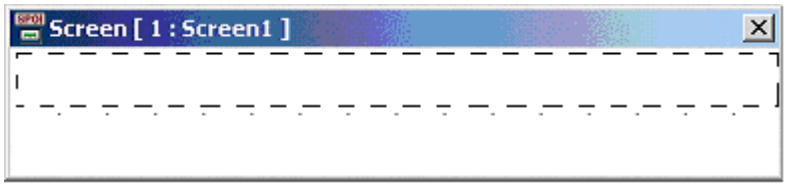
To configure screens:

- From the *Define* menu, select the *Screens* command. The following dialog is displayed:



- Select the *Ok* button to accept these settings for Screen 1. The following display is displayed in the middle of the screen configuration display. This display correlates to the actual LCD on the SCADAPack Vision-10.

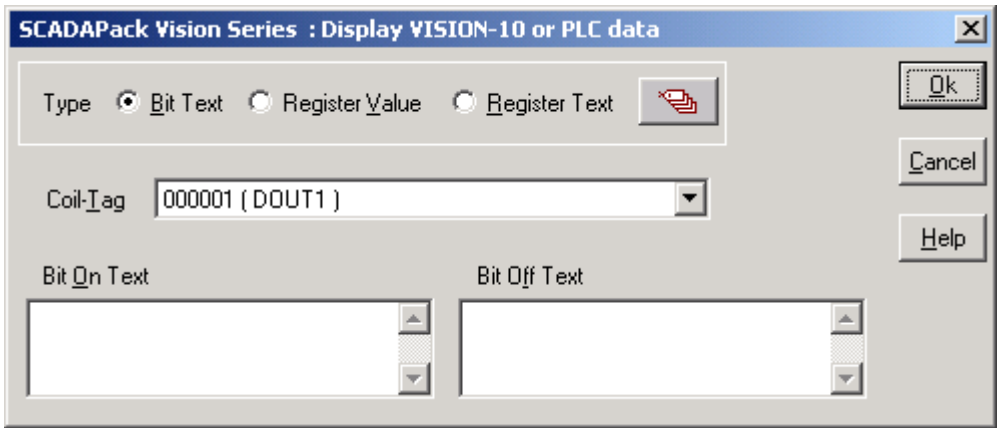
- From the *Objects* | *Alphanumeric Objects* menu, select the *Text* command. The cursor changes to the Text cursor.
- With the Text cursor, select the upper left corner of the top line of the screen display. Then click and drag to the lower right corner of the top line of the screen display. Release the mouse button.



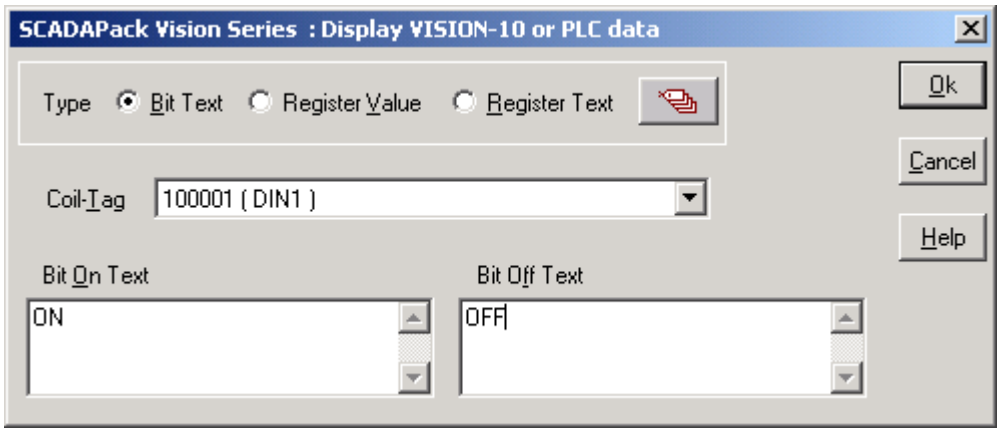
- At the flashing cursor box, enter the text “Digital Input #1”, (omit the quotations). This text string should fit exactly into the top line of the display.

- From the *Objects* | *Alphanumeric Objects* menu, select the *Display PLC Data* command. The cursor changes to the Display Data cursor.

- With the Display Data cursor, select the upper left corner of the bottom line of the screen display. Then click and drag to the lower right corner of the bottom line. Release the mouse button. The following dialog appears:



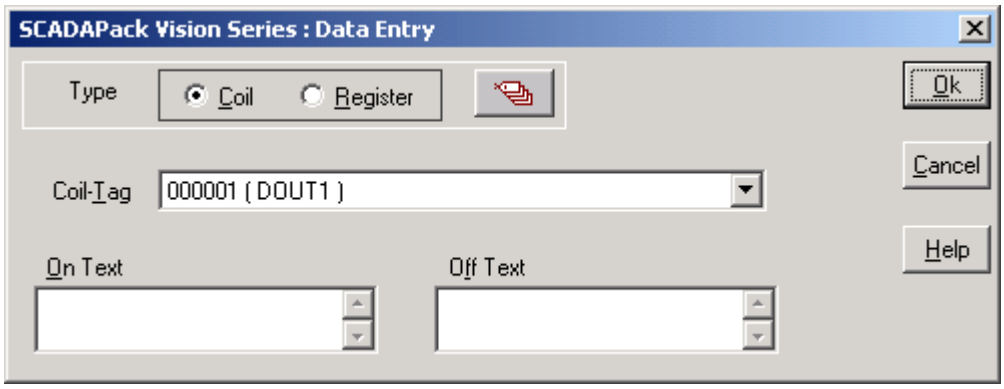
- With the *Bit Text* radio button selected, choose "100001 (DIN1)" in the *Coil-Tag* data entry field.
- Enter "ON" in the *Bit On Text* field.
- Enter "OFF" in the *Bit Off Text* field. When completed the dialog should appear like this:



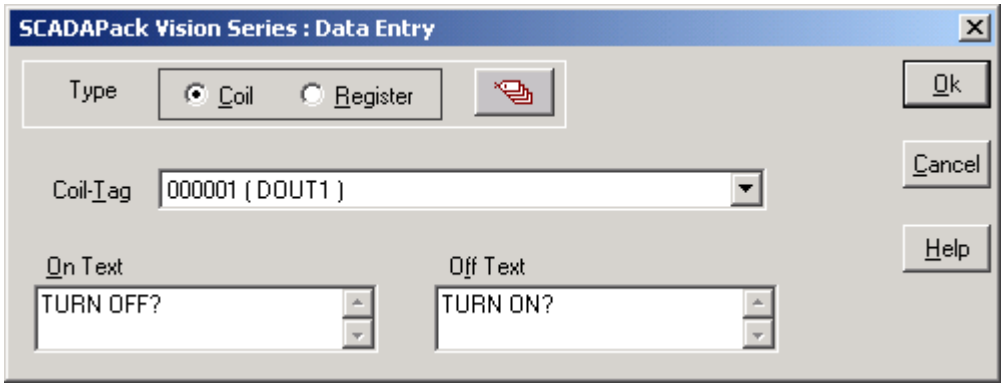
- Select the *Ok* button to accept the configuration and close the dialog. The completed screen should appear like this:

- To create a second screen, from the *Screen* menu, select the *New* command.
- Select *Ok* on the *New Screen* dialog to create Screen 2.
- As with Screen 1, enter the text string "Digital Out #1" into the top line of the display.
- From the *Objects* | *Alphanumeric Objects* menu, select the *Data Entry* command. The cursor changes to the Data Entry cursor.

- With the Data Entry cursor, select the upper left corner of the bottom line of the screen display. Then click and drag to the lower right corner of the bottom line. Release the mouse button. The following dialog appears:

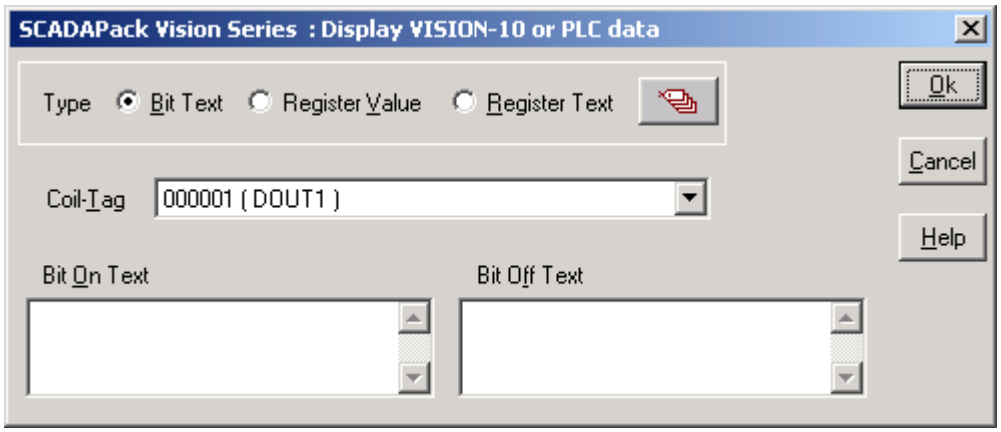


- With the *Coil* radio button selected and "000001 (DOUT1)" displayed in the *Coil-Tag* data field, enter "TURN OFF?" into the *On Text* field.
- Enter "TURN ON?" into the Off *Text* field. When completed, the dialog should appear like this:

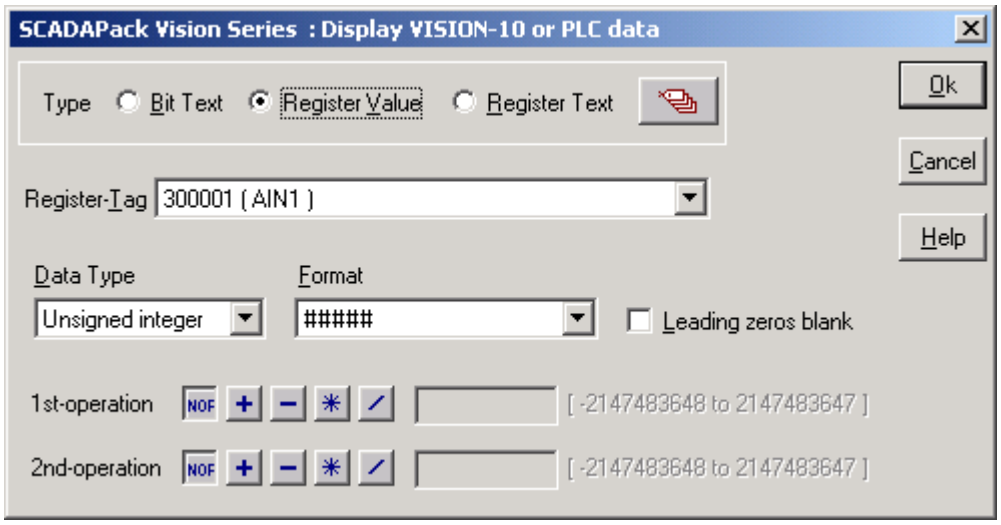


- Select the *Ok* button to accept the configuration and close the dialog. The completed screen should appear like this:

- To create a third screen, from the *Screen* menu, select the *New* command.
- Select *Ok* on the *New Screen* dialog to create Screen 3.
- As with the two previous screens, enter the text string "Analog Input #1" into the top line of the display.
- From the *Objects* | *Alphanumeric Objects* menu, select the *Display PLC Data* command. The cursor changes to the Display Data cursor.
- With the Display Data cursor, select the upper left corner of the bottom line of the screen display. Then click and drag to the lower right corner of the bottom line. Release the mouse button. The following dialog appears:



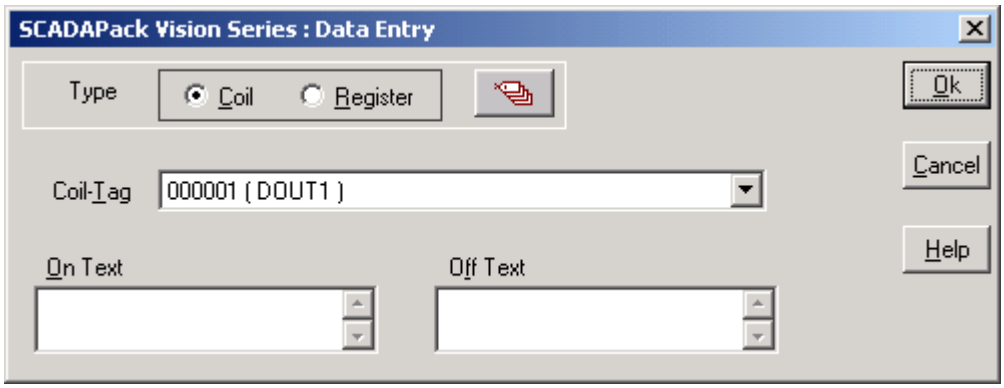
- Select the *Register Value* radio button. The dialog changes its appearance to the following:



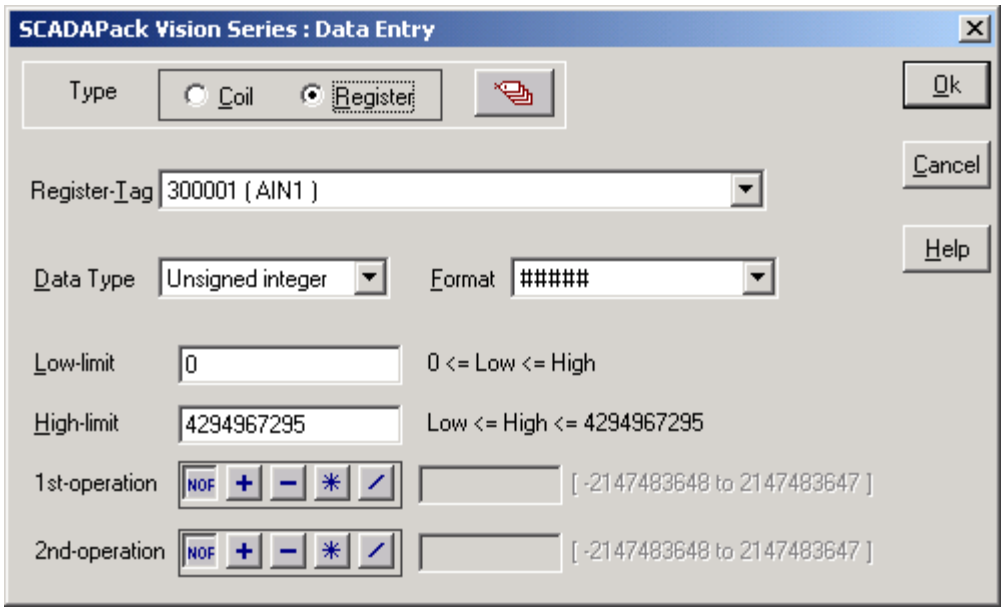
- With "300001 (AIN1)" displayed in the *Register-Tag* field, "Unsigned integer" in the *Data Type* field and "#####" in the *Format* field, select the *Ok* button to accept this configuration and close the dialog.
- When completed, the screen display should appear like this:

- To create the fourth and last screen, from the *Screen* menu, select the *New* command.
- Select *Ok* on the *New Screen* dialog to create Screen 4.
- As with the previous screens, enter the text string "Floating Point#1" into the top line of the display.
- From the *Objects* | *Alphanumeric Objects* menu, select the *Data Entry* command. The cursor changes to the Data Entry cursor.

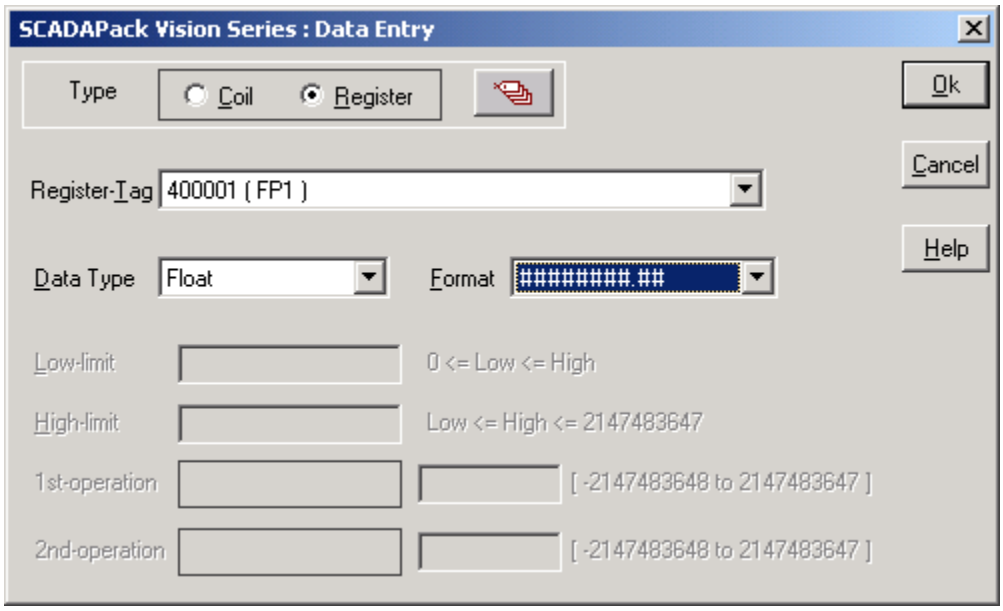
- With the Data Entry cursor, select the upper left corner of the bottom line of the screen display. Then click and drag to the lower right corner of the bottom line. Release the mouse button. The following dialog appears:



- Select the *Register* radio button. The dialog changes its appearance to the following:

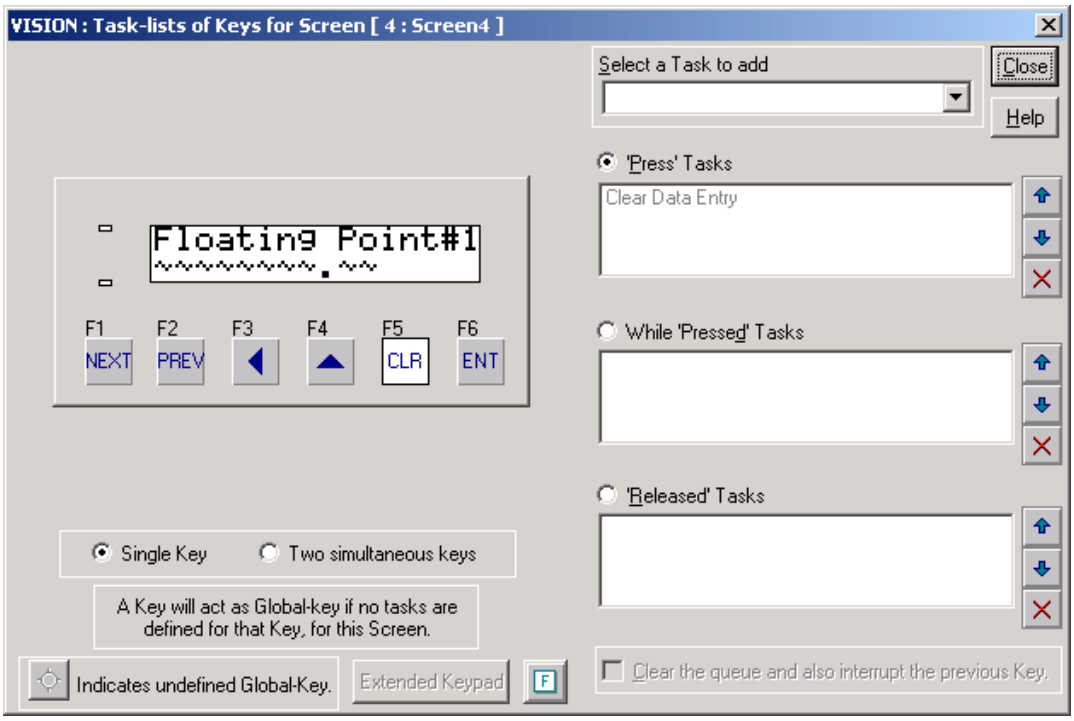


- Select the "400001 (FP1)" entry in the *Register-Tag* field.
- Select the "Float" entry in the *Data Type* field.
- Select the "########.##" entry in the *Format* field. When completed, the dialog should appear like this:

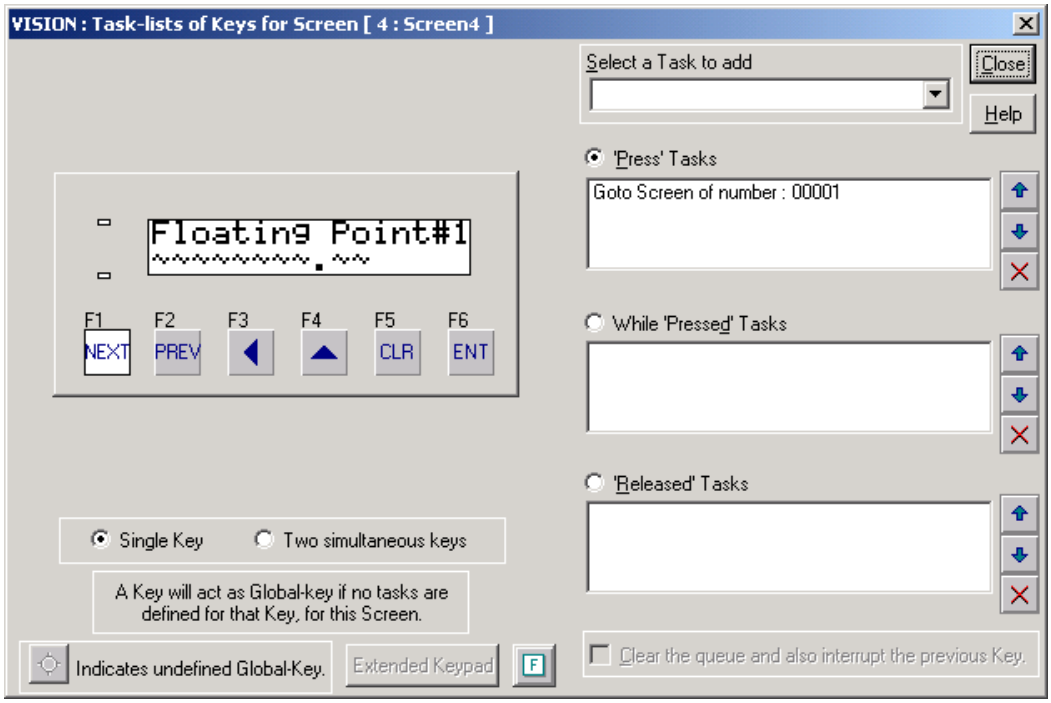


- Select the *Ok* button to accept the configuration and close the dialog.
- When completed, the screen display should appear like this:

To navigate between these four screens, the *NEXT* and *PREV* keys are used. These keys are configured by default to change to either the next screen or the previous screen. However, in order to scroll through the four screens in a "wrap-around" mode, the *PREV* key for Screen 1 has to be reprogrammed to go to Screen 4 and the *NEXT* key on Screen 4 has to be reprogrammed to go to screen 1. While remaining with Screen 4 on the display, from the *Screen* menu, select the *Keys for Screen* command. The following dialog appears:

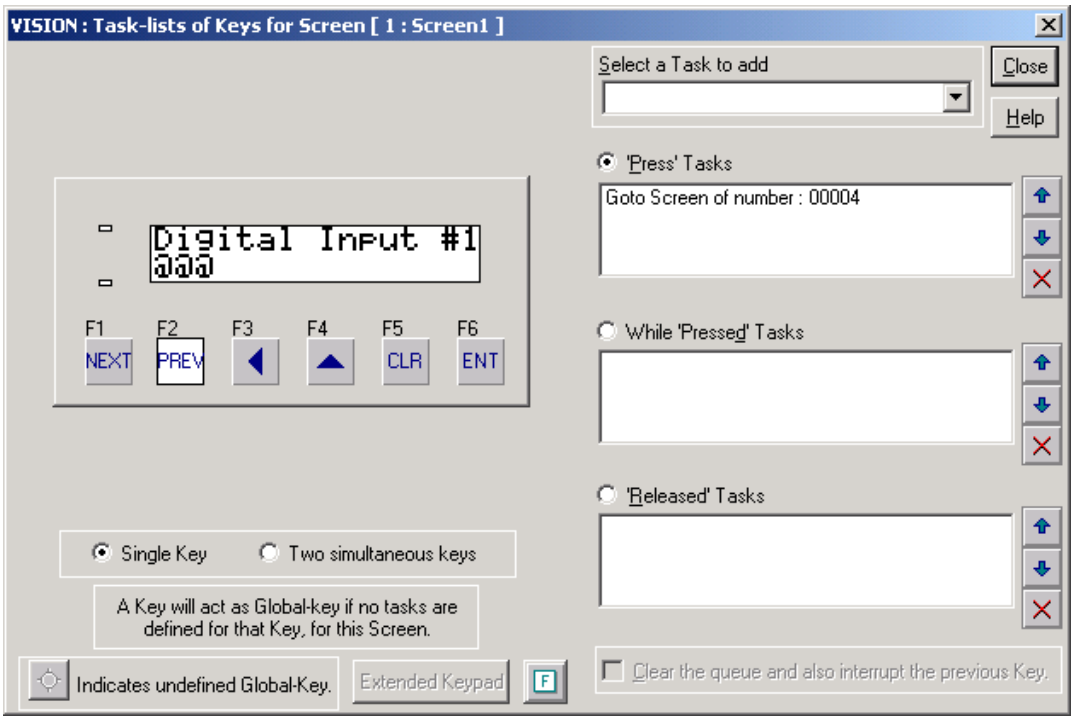

VISION : Task-lists of Keys for Screen [4 : Screen4]
Select a Task to add
Close
Help
'Press' Tasks
Clear Data Entry
Floating Point#1
F1 F2 F3 F4 F5 F6
NEXT PREV CLR ENT
While 'Pressed' Tasks
'Released' Tasks
Single Key
Two simultaneous keys
A Key will act as Global-key if no tasks are defined for that Key, for this Screen.
Indicates undefined Global-Key.
Extended Keypad
Clear the queue and also interrupt the previous Key.

- Select the *NEXT* button.
- Select the "Goto Screen" entry in the *Select a Task to add* field.
- From the *Goto Screen* dialog list that appears, select "00001 Screen1".
- Select *Ok* to accept the configuration and close the dialog. When completed, the dialog should appear like this:


VISION : Task-lists of Keys for Screen [4 : Screen4]
Select a Task to add
Close
Help
'Press' Tasks
Goto Screen of number : 00001
Floating Point#1
F1 F2 F3 F4 F5 F6
NEXT PREV CLR ENT
While 'Pressed' Tasks
'Released' Tasks
Single Key
Two simultaneous keys
A Key will act as Global-key if no tasks are defined for that Key, for this Screen.
Indicates undefined Global-Key.
Extended Keypad
Clear the queue and also interrupt the previous Key.

- Select the *Close* button to accept the configuration and close the dialog.

- From the *Screen* menu, select the *Select Screen* command.
- From the Select *Screen* dialog list that appears, select “00001 Screen1”.
- Select *Ok* to accept the configuration and close the dialog. Screen 1 is now displayed in the dialog.
- As with Screen 4, configure the *PREV* button on Screen 1 to go to Screen 4. When completed, the dialog should appear like this:

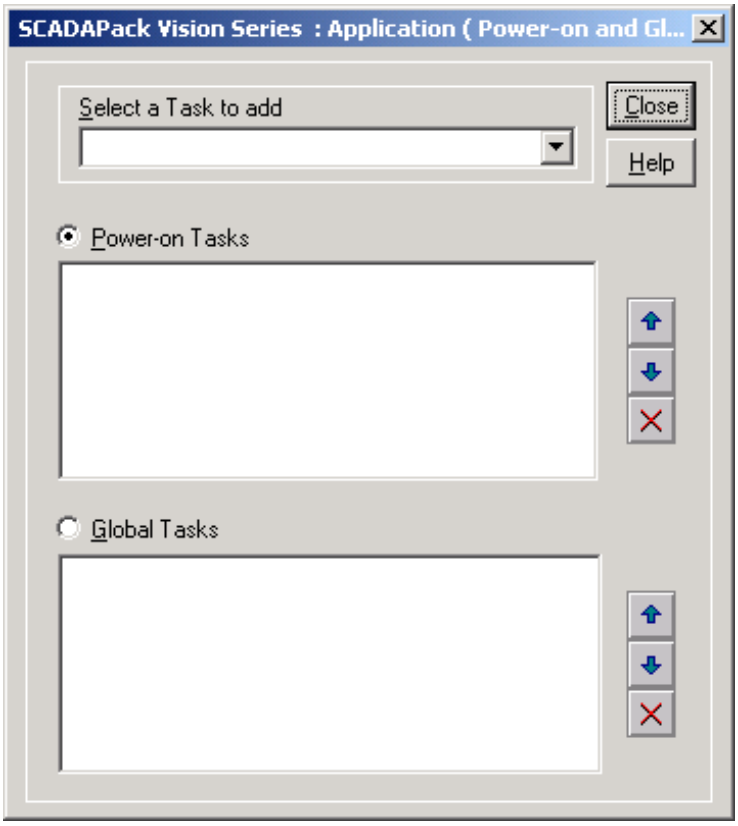


- Select the *Close* button to accept the configuration and close the dialog.
- From the *Screens* menu, select the *Close Screens session* command to accept the screens configuration and close the screen-editing dialog.

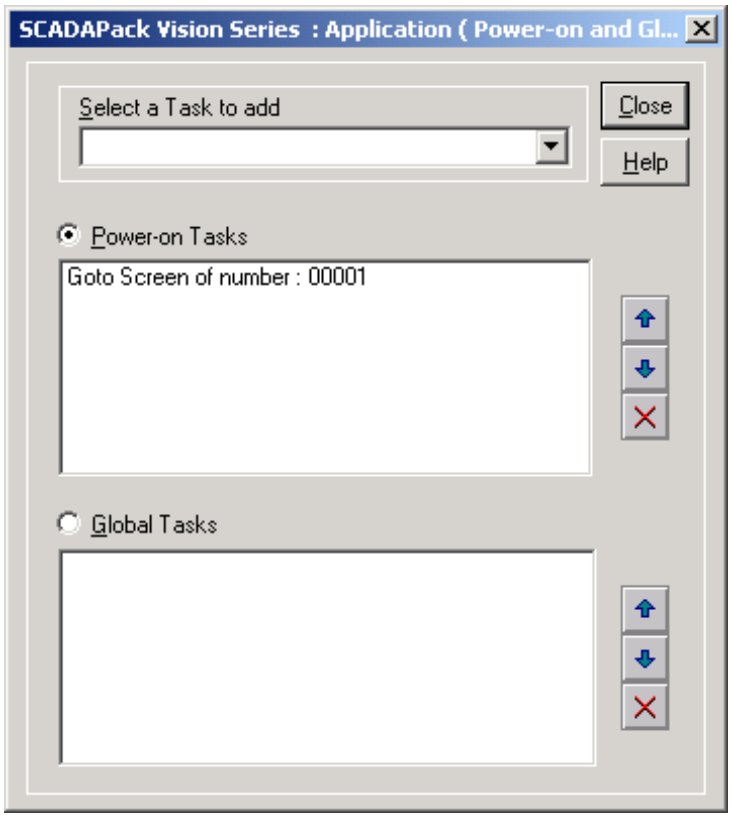
6.2.6 Configure Application Task List

In this example, Screen 1 will be automatically displayed each time power is applied to the SCADAPack Vision-10. This is accomplished with the Application Task List.

From the *Define* menu, select the *Application Tasklists* command. The following dialog appears:



- With the *Power-0n Tasks* radio button selected, choose "Goto Screen" in the *Select a Task to add* field.
- From the *Goto Screen* dialog list that appears, select "00001 Screen1".
- Select *Ok* to accept the configuration and close the dialog. When completed, the dialog should appear like this:



- Select the *Close* button to accept the configuration and close the dialog.

6.2.7 Save the Configuration file

The SCADAPack Vision-10 configuration, completed with steps 1 to 6, can be saved to a configuration file for future use. The file has the "pzm" file extension.

To save the configuration file

- From the *File* menu, select the *Save as* command.
- Change the entry in the *File name* field to "demo.pzm".
- Using the *Save in* field and the file folder list, locate a suitable hard drive or server location to save the configuration file.
- Select the *Save* button to save the configuration file and close the dialog.

6.2.8 Connect SCADAPack Vision-10 to PLC

In order for the SCADAPack Vision-10 operator interface to communicate with the PLC, a special null modem cable has to be used. This cable must provide 5VDC on pin 9 to power the SCADAPack Vision-10. The SCADAPack series of controllers provides the required power on pin 9.

To connect the SCADAPack Vision-10 to the PLC

- Configure a four-wire null modem cable, (see ***Figure 9: SCADAPack Vision-10 PLC Port to SCADAPack Serial Port Connection***).
- Connect the cable from the SCADAPack Vision-10 PLC Port to the PLC serial port. As soon as the connection is made, the LCD display on the SCADAPack Vision-10 should illuminate and the downloaded application should function. If the SCADAPack Vision-10 does not power up, check that 5VDC is present on pin 9 of the SCADAPack Vision-10 to PLC Port cable.

6.2.9 Initialize SCADAPack Vision-10

Initializing the SCADAPack Vision-10 erases the previously downloaded application and initializes the SCADAPack Vision-10 memory. To initialize the SCADAPack Vision-10:

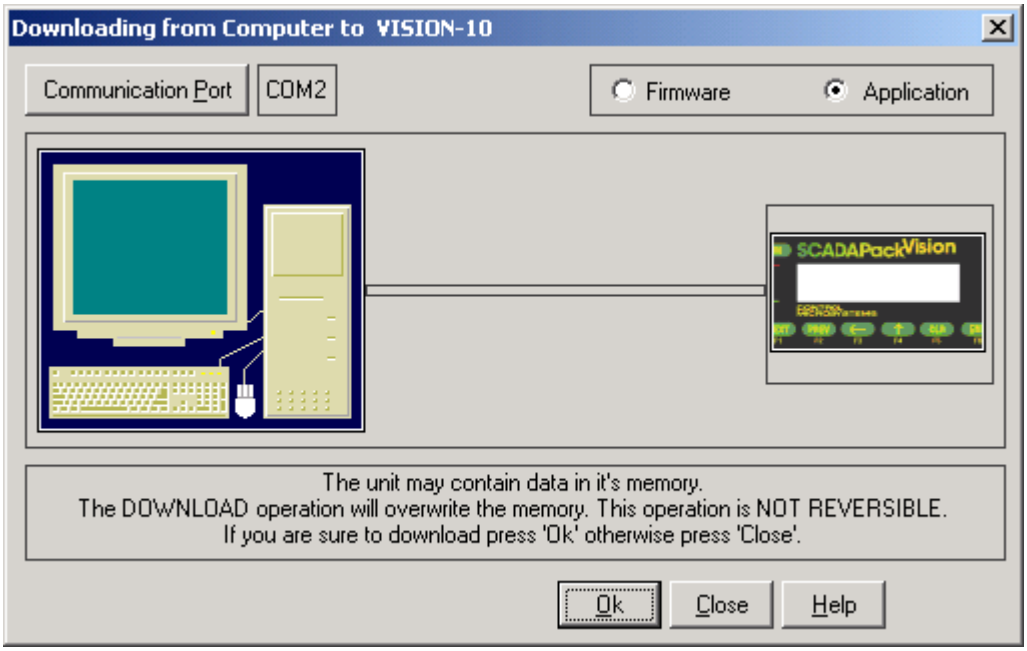
- Remove power to the SCADAPack Vision-10,
- Press and hold the F1 and F6 keys simultaneously,
- Restore power to the SCADAPack Vision-10,
- Release the keys when the message "Initializing Memory…" message appears in the display. The initialization is complete when the "CMI VISION-10" message is displayed.

6.2.10 Download Configuration File to SCADAPack Vision-10

Once the configuration file has been created, it must be written or "downloaded" to the PLC. The file is downloaded from the computer RS-232 serial port, through a null modem cable to the SCADAPack Vision-10 Serial port.

To download the configuration file to the SCADAPack Vision-10:

- Connect a three-wire, null modem cable (see ***Figure 13: SCADAPack Vision-10 Serial Port to Computer Serial Port Connection***) from the computer RS-232 serial port to the SCADAPack Vision-10 Serial Port.
- In the SCADAPack Vision configuration software, from the *Communicate* menu, select the *Communication Port* command.
- Select the appropriate com port for the computer from the Communication Port dialog list that is displayed.
- Select *Ok* to accept the configuration and close the dialog.
- From the *Communicate* menu, select the *Download* command. The following dialog appears:



- With the *Application* radio button selected, select the Ok button to begin the download.
- As the download proceeds, a red line moving from the computer graphic towards the SCADAPack Vision-10 graphic indicates the progress.
- A dialog appears when the download is completed.
- Select *Ok* to close the dialog.

6.3 SCADAPack Vision-50 Program Development

This section of the manual is organized in a manner that will lead the new user through the steps required to create a SCADAPack Vision-50 configuration file and download the file to the SCADAPack Vision-50 operator interface. It is recommended that new users follow the steps outlined in this section.

- Open SCADAPack Vision Software
- Create New Configuration File
- Configure Network Configuration
- Configure Tags
- Configure Screens
- Configure Application Task List
- Save the Configuration file
- Download Configuration File to SCADAPack Vision-50
- Connect SCADAPack Vision-50 to PLC

The SCADAPack Vision-50 operator interface displays PLC register data and provides operators with the ability to write data to the PLC. A SCADAPack Vision configuration file must be created and downloaded to the SCADAPack Vision-50 operator interface in order to utilize the SCADAPack Vision-50 operator interface.

The SCADAPack Vision configuration that will be created in this example procedure will contain one display screen and it will be example for scaling using SCADAPack Vision-50.

This section of the manual assumes that you have configured a SCADAPack Series PLC (or similar) to be polled as a Modbus slave by the SCADAPack Vision-50.

The SCADAPack Vision Configuration Software section contains detailed explanations for all the commands and functions described in this section.

Follow the steps outlined below to configure the SCADAPack Vision-50 and download the file to the operator interface.

6.3.1 Open SCADAPack Vision Software

- From the *START* | *PROGRAMS* | *Vision* menu, select the SCADAPack Vision icon to open the configuration software.

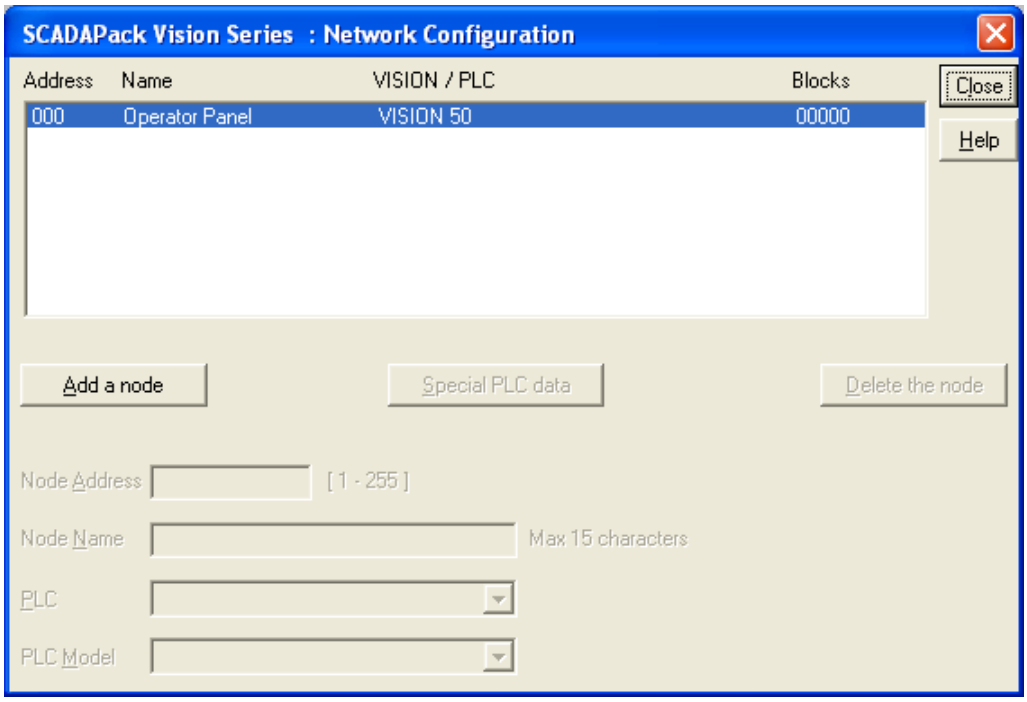
6.3.2 Create New Configuration File

- From the *File* menu, select *New*. A graphic of the SCADAPack Vision-10 and SCADAPack Vision-50 is displayed.
- Click on SCADAPack Vision-50 icon to choose the SCADAPack Vision-50 configuration and close the dialog by clicking on the Ok button.

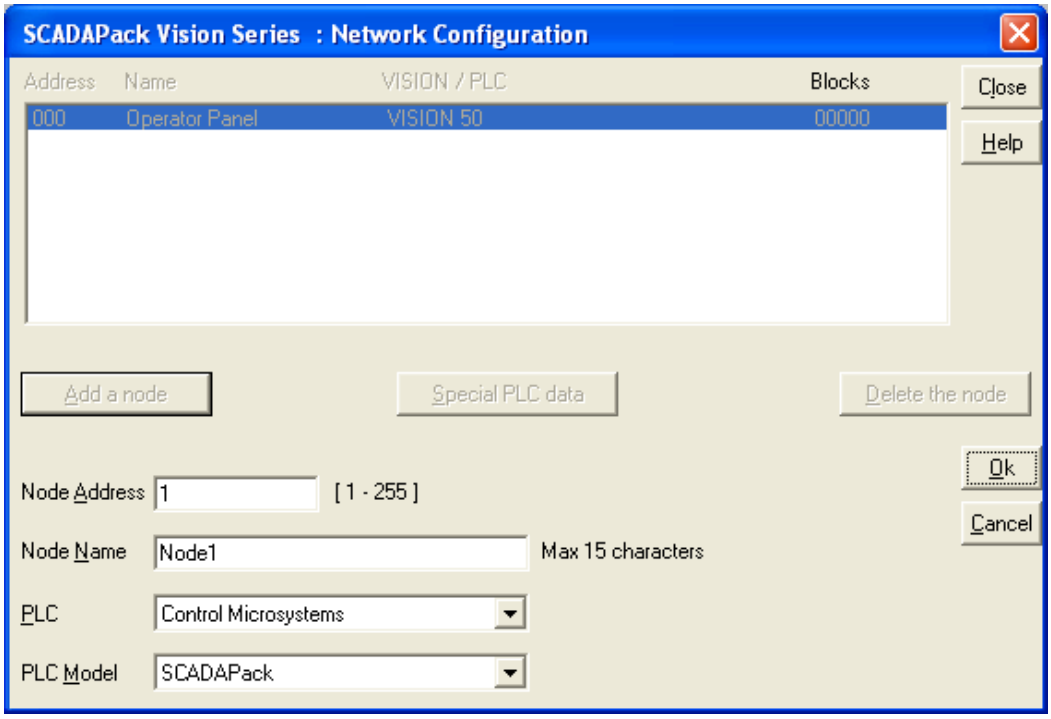
6.3.3 Configure Network Configuration

The Network Configuration dialog is used to identify the PLC with which the SCADAPack Vision will communicate.

- From the *Define* menu, select *Network Configuration*. The following dialog appears:



- Select the *Add a node* button. The four data entry fields are filled as follows:



The settings that are displayed configure the SCADAPack Vision-50 to communicate with a SCADAPack Series controller, station address 1.

- Select *Ok* to accept these settings and close the dialog.
- Select the *Close* button to accept the Network Configuration settings and close the dialog.

6.3.4 Configure Tags

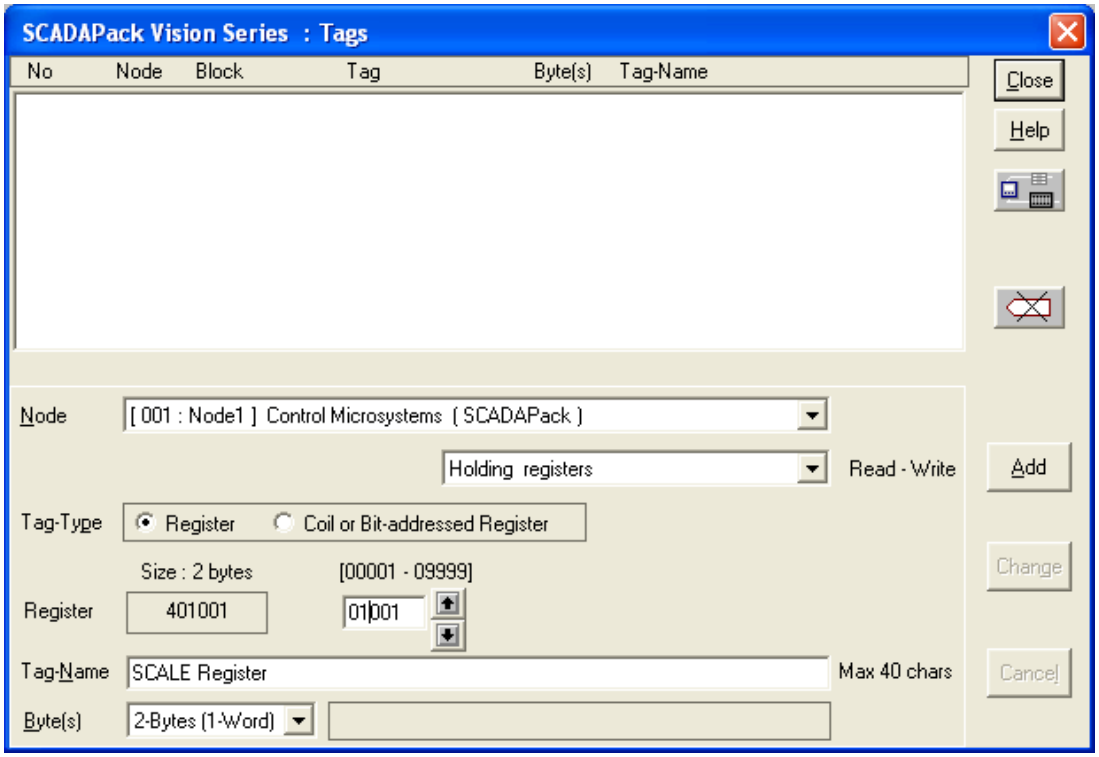
A "Tag" is an identifying name given to each data point that is to be read from or written to the PLC.

The four types of SCADAPack PLC data registers supported by the SCADAPack Vision-50 are:

- Coils, (SCADAPack 0XXXX series)
- Input status, (SCADAPack 1XXXX series)
- Input registers, (SCADAPack 3XXXX series) and
- Holding registers (SCADAPack 4XXXX series).

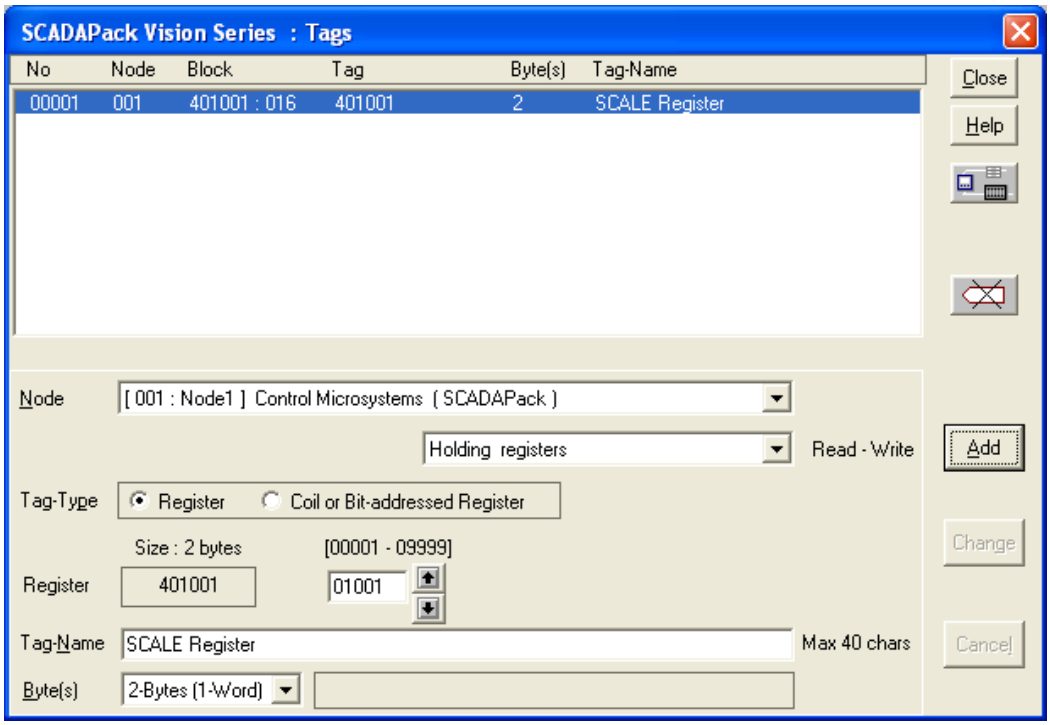
To configure tags:

- From the *Define* menu, select the *Tag Database* command. The following dialog appears:



- In the *Node* data field, select the "[001: Node1] Control Microsystems (SCADAPack)" entry. This action allows for the configuration of tags related to the IO database addresses found in the SCADAPack PLC.
- Select "Holding Registers" in the *Read-Write* data field.
- Select "2-Bytes (1-Word)" in the *Byte(s)* field.

- With “01001” displayed in the *[00001 –09999]* field and the *Register Tag-Type* radio button selected, enter “SCALE Register” in the *Tag-Name* field.
- Select the *Add* button. A tag named “SCALE Register” is created which is associated with the SCADAPack IO database addresses 41001 and 41002.
- When completed, the *Tags* dialog should appear like this:



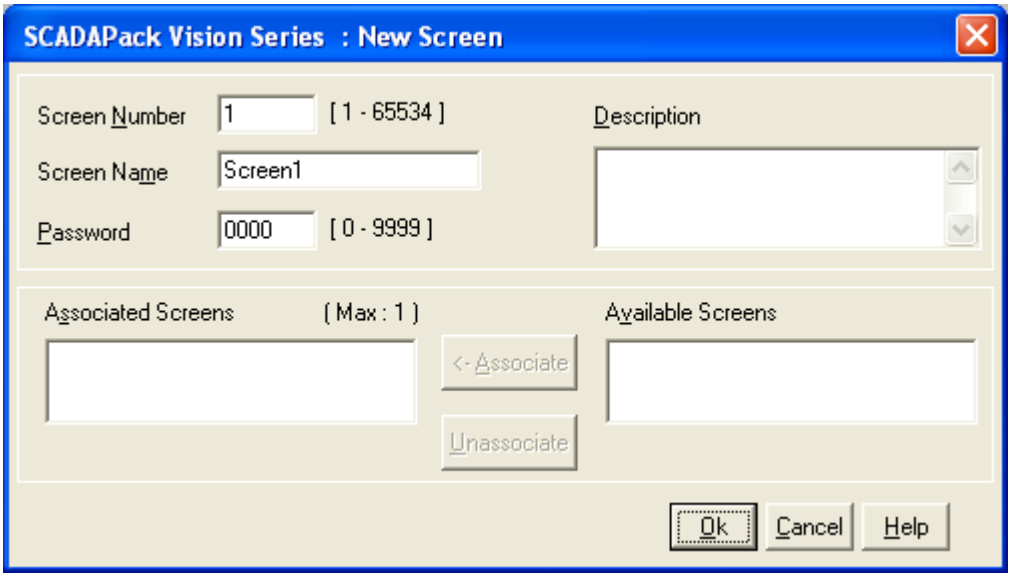
- Select the *Close* button to save the configured tags and close the dialog.

6.3.5 Configure Screens

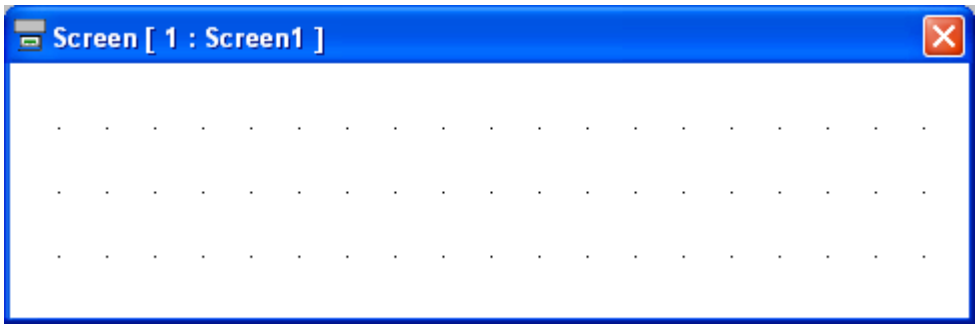
PLC data associated with tags is displayed on the SCADAPack Vision-50's LCD by configuring "screens".

To configure screens:

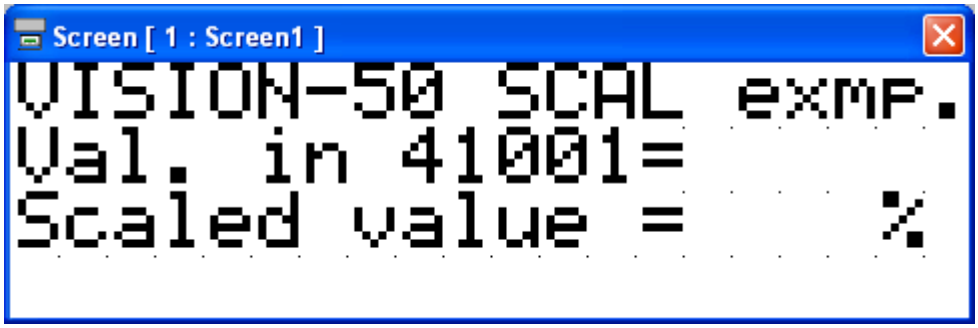
- From the *Define* menu, select the *Screens* command. The following dialog is displayed:



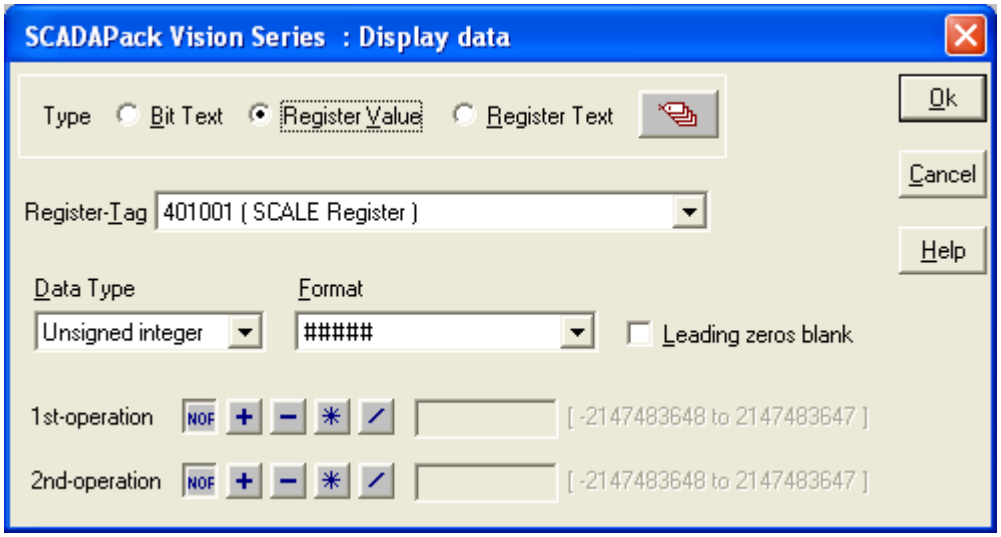
- Select the *Ok* button to accept these settings for Screen 1. The following display is displayed in the middle of the screen configuration display. This display correlates to the actual LCD on the SCADAPack Vision-50.



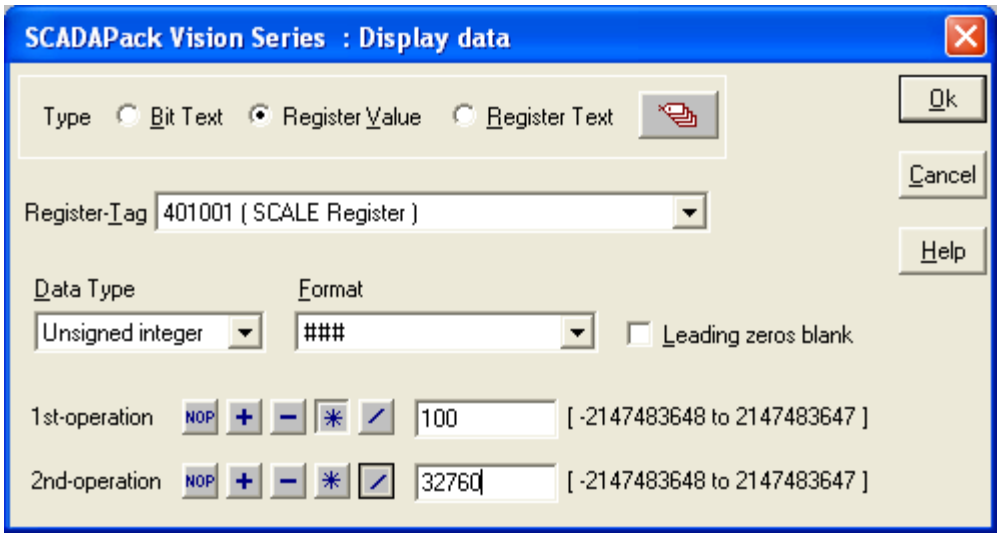
- From the *Objects* | *Alphanumeric Objects* menu, select the *Text* command. The cursor changes to the Text cursor.
- With the Text cursor, select the upper left corner of the top line of the screen display. Then click and drag to the lower right corner of the top line of the screen display. Release the mouse button.
- At the flashing cursor box, enter the text as displayed in the following screen:



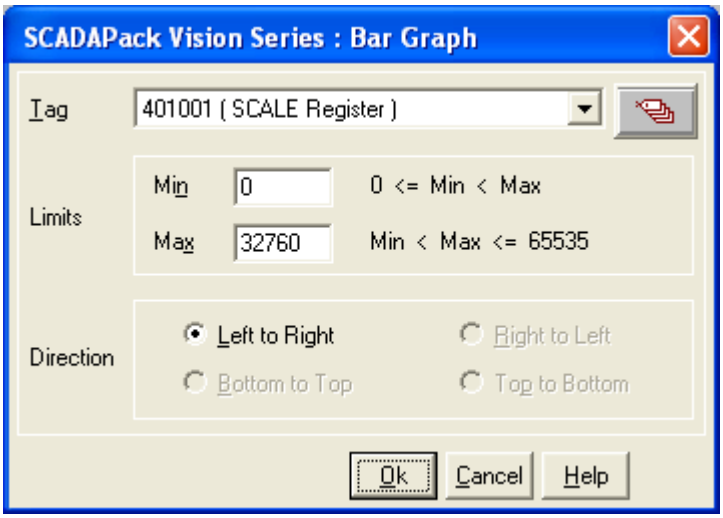
- From the *Objects* | *Alphanumeric Objects* menu, select the *Display PLC Data* command. The cursor changes to the Display Data cursor.
- With the Display Data cursor, click on the position 16 of the 2nd line of the screen display. When "Display dialog" appear on the screen select settings as shown on the below and click on Ok button. Note that 1st-operation and 2nd operation are set for the "NOP".



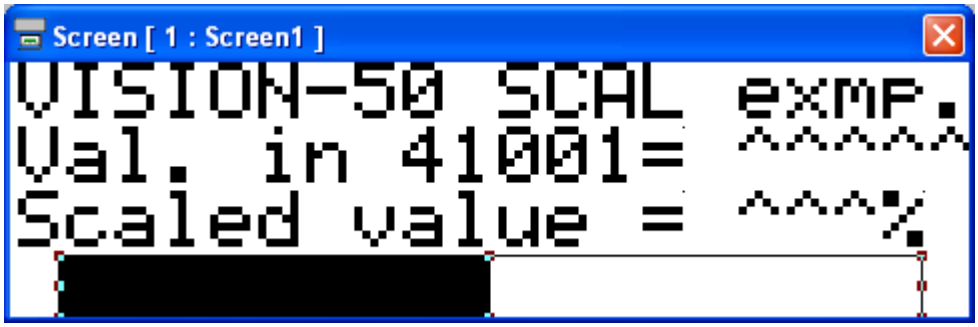
- From the *Objects* | *Alphanumeric Objects* menu, select the *Display PLC Data* command. The cursor changes to the Display Data cursor.
- With the Display Data cursor, click on the position 16 of the 3rd line of the screen display. When "Display dialog" appear on the screen select settings as shown on the below and click on Ok button. Note that 1st-operation is set to multiplying by 100 and 2nd operation for division by 32760. Display format is set for the 3 characters because output will go from 0 to 100.



- From the *Objects* | *Alphanumeric Objects* menu, select the *Bargraph* command. The cursor changes to the Display Data cursor.
- With the Display Data cursor, click on the position 1 of the 4th line of the screen display. When "Display dialog" appear on the screen select settings as shown on the below and click on Ok button.

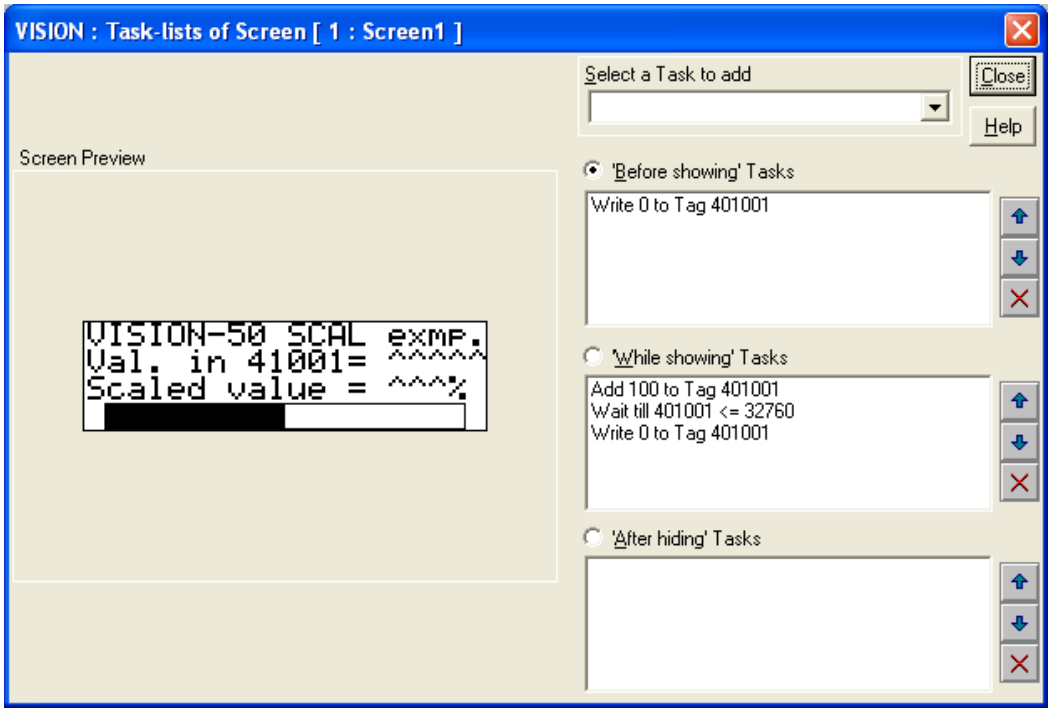


- Adjust the size of the bargraph so that after all this entries you can see following screen:



- From the *Screen objects* menu, select the "Tasklist of Screen" command.

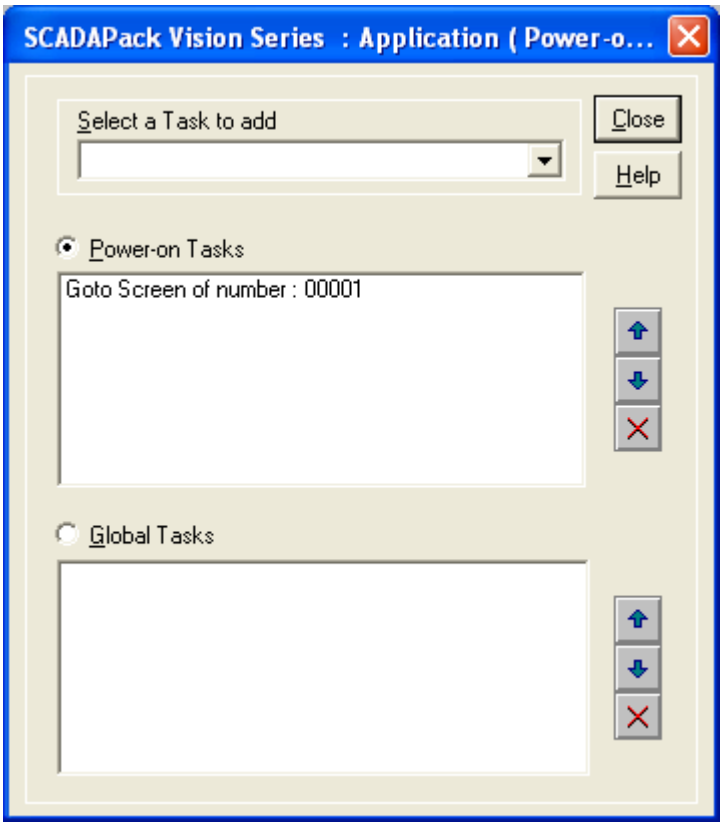
- When “Display dialog” appear on the screen add tasks as shown below and click on Close button. Use “Select a Task to add” list to add the tasks.



6.3.6 Configure Application Task List

In this example, Screen 1 will be automatically displayed each time power is applied to the SCADAPack Vision-50. This is accomplished with the Application Task List.

- From the *Define* menu, select the *Application Tasklists* command and "Application …" dialog box will appear.
- With the *Power-0n Tasks* radio button selected, choose "Goto Screen" in the *Select a Task to add* field.
- From the *Goto Screen* dialog list that appears, select "00001 Screen1".
- Select *Ok* to accept the configuration and close the dialog. When completed, the dialog should appear like this



- Select the *Close* button to accept the configuration and close the dialog.

6.3.7 Save the Configuration file

The SCADAPack Vision-50 configuration, completed with steps 1 to 6, can be saved to a configuration file for future use. The file has the "pzm" file extension.

To save the configuration file

- From the *File* menu, select the *Save as* command.
- Change the entry in the *File name* field to "demo50.pzm".
- Using the *Save in* field and the file folder list, locate a suitable hard drive or server location to save the configuration file.
- Select the *Save* button to save the configuration file and close the dialog.

6.3.8 Connect SCADAPack Vision-50 to PLC

In order for the SCADAPack Vision-50 operator interface to communicate with the PLC, a special null modem cable has to be used. This cable must provide 5VDC on pin 9 to power the SCADAPack Vision-50. The SCADAPack series of controllers provides the required power on pin 9.

To connect the SCADAPack Vision-50 to the PLC

- Configure a four-wire null modem cable, (see ***Figure 19: SCADAPack Vision-50 PLC Port to SCADAPack Serial Port Connection***).
- Connect the cable from the SCADAPack Vision-50 PLC Port to the PLC serial port. As soon as the connection is made, the LCD display on the SCADAPack Vision-50 should illuminate and the downloaded application should function. If the SCADAPack Vision-50 does not power up, check that 5VDC is present on pin 9 of the SCADAPack Vision-50 to PLC Port cable.

6.3.9 Initialize SCADAPack Vision-50

Initializing the SCADAPack Vision-50 erases the previously downloaded application and initializes the SCADAPack Vision-50 memory. To initialize the SCADAPack Vision-50:

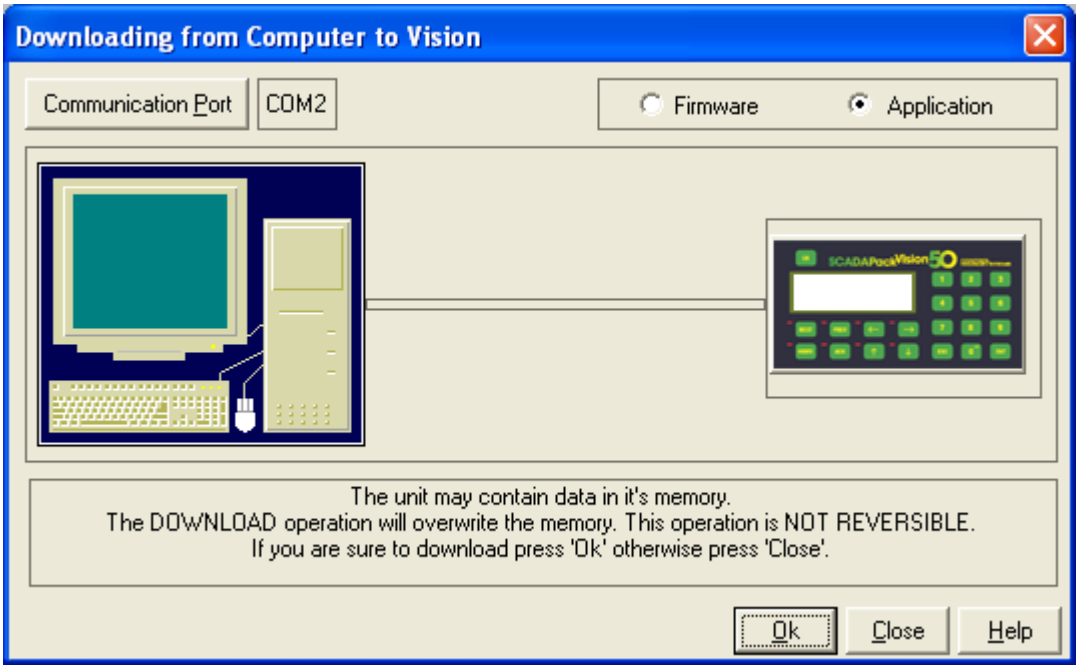
- Remove power to the SCADAPack Vision-50,
- Press and hold the F5[HOME] and ENT keys simultaneously,
- Restore power to the SCADAPack Vision-50,
- Release the keys when the message "Initializing Memory…" message appears in the display. The initialization is complete when the "VISION-50" message is displayed.

6.3.10 Download Configuration File to SCADAPack Vision-50

Once the configuration file has been created, it must be written or "downloaded" to the PLC. The file is downloaded from the computer RS-232 serial port, through a null modem cable to the SCADAPack Vision-50 Serial port.

To download the configuration file to the SCADAPack Vision-50:

- Connect a three-wire, null modem cable (see ***Figure 23: SCADAPack Vision-50 Serial Port to Computer Serial Port Connection***) from the computer RS-232 serial port to the SCADAPack Vision-50 Serial Port.
- In the SCADAPack Vision configuration software, from the *Communicate* menu, select the *Communication Port* command.
- Select the appropriate com port for the computer from the Communication Port dialog list that is displayed.
- Select *Ok* to accept the configuration and close the dialog.
- From the *Communicate* menu, select the *Download* command. The following dialog appears:


Downloading from Computer to Vision
Communication Port
COM2
Firmware
Application
The unit may contain data in it's memory.
The DOWNLOAD operation will overwrite the memory. This operation is NOT REVERSIBLE.
If you are sure to download press 'Ok' otherwise press 'Close'.
Ok
Close
Help

- With the *Application* radio button selected, select the Ok button to begin the download.
- As the download proceeds, a red line moving from the computer graphic towards the SCADAPack Vision-50 graphic indicates the progress.
- A dialog appears when the download is completed.
- Select *Ok* to close the dialog.

6.4 SCADAPack Vision-60 Program Development

This section of the manual is organized in a manner that will lead the new user through the steps required to create a SCADAPack Vision-60 configuration file and download the file to the SCADAPack Vision-60 operator interface. It is recommended that new users follow the steps outlined in this section.

- Open SCADAPack Vision Software
- Create New Configuration File
- Configure Network Configuration
- Configure Tags
- Configure Screens
- Configure Application Task List
- Save the Configuration file
- Download Configuration File to SCADAPack Vision-60
- Connect SCADAPack Vision-60 to PLC

The SCADAPack Vision-60 operator interface displays PLC register data and provides operators with the ability to write data to the PLC. A SCADAPack Vision configuration file must be created and downloaded to the SCADAPack Vision-60 operator interface in order to utilize the SCADAPack Vision-60 operator interface.

The SCADAPack Vision configuration that will be created in this example procedure will contain one display screen and it will be example for scaling using SCADAPack Vision-60.

This section of the manual assumes that you have configured a SCADAPack Series PLC (or similar) to be polled as a Modbus slave by the SCADAPack Vision-60.

The SCADAPack Vision Configuration Software section contains detailed explanations for all the commands and functions described in this section.

Follow the steps outlined below to configure the SCADAPack Vision-60 and download the file to the operator interface.

6.4.1 Open SCADAPack Vision Software

- From the *START* | *PROGRAMS* | *Vision* menu, select the SCADAPack Vision icon to open the configuration software.

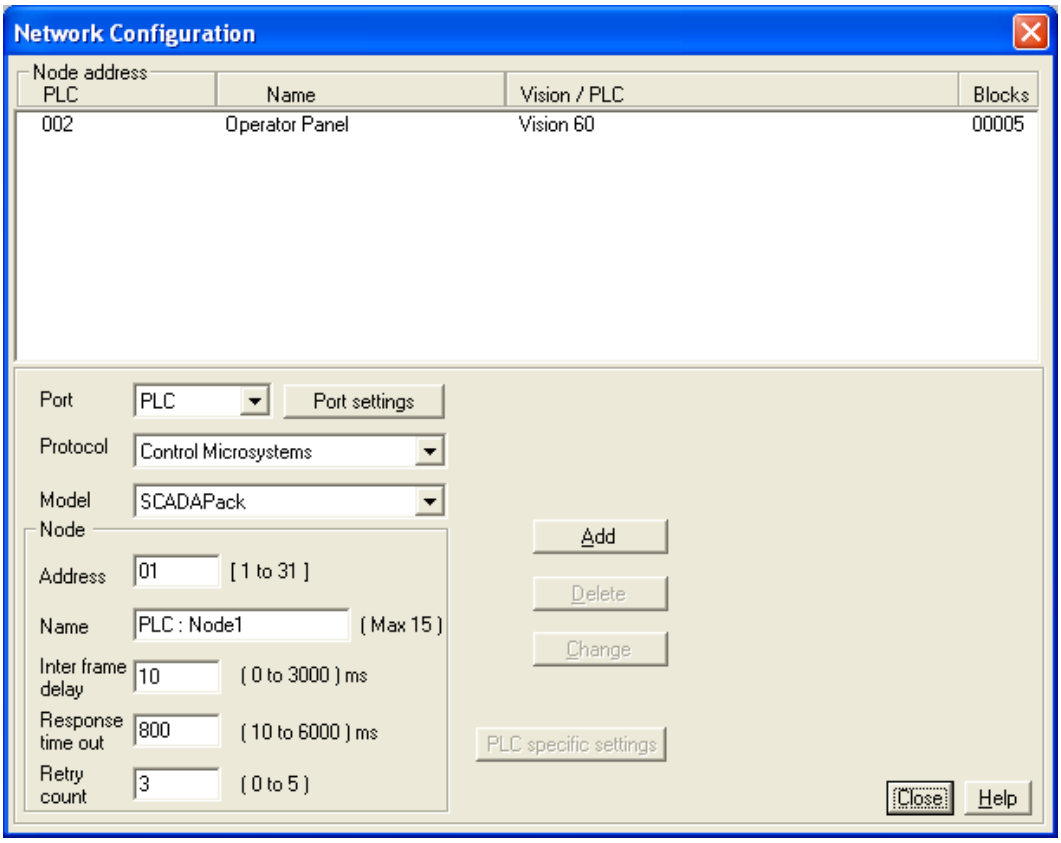
6.4.2 Create New Configuration File

- From the *File* menu, select *New*. A graphic of the SCADAPack Vision-10, SCADAPack Vision 50 and SCADAPack Vision-60 is displayed.
- Click on SCADAPack Vision-60 icon to choose the SCADAPack Vision-60 configuration and close the dialog by clicking on the Ok button.

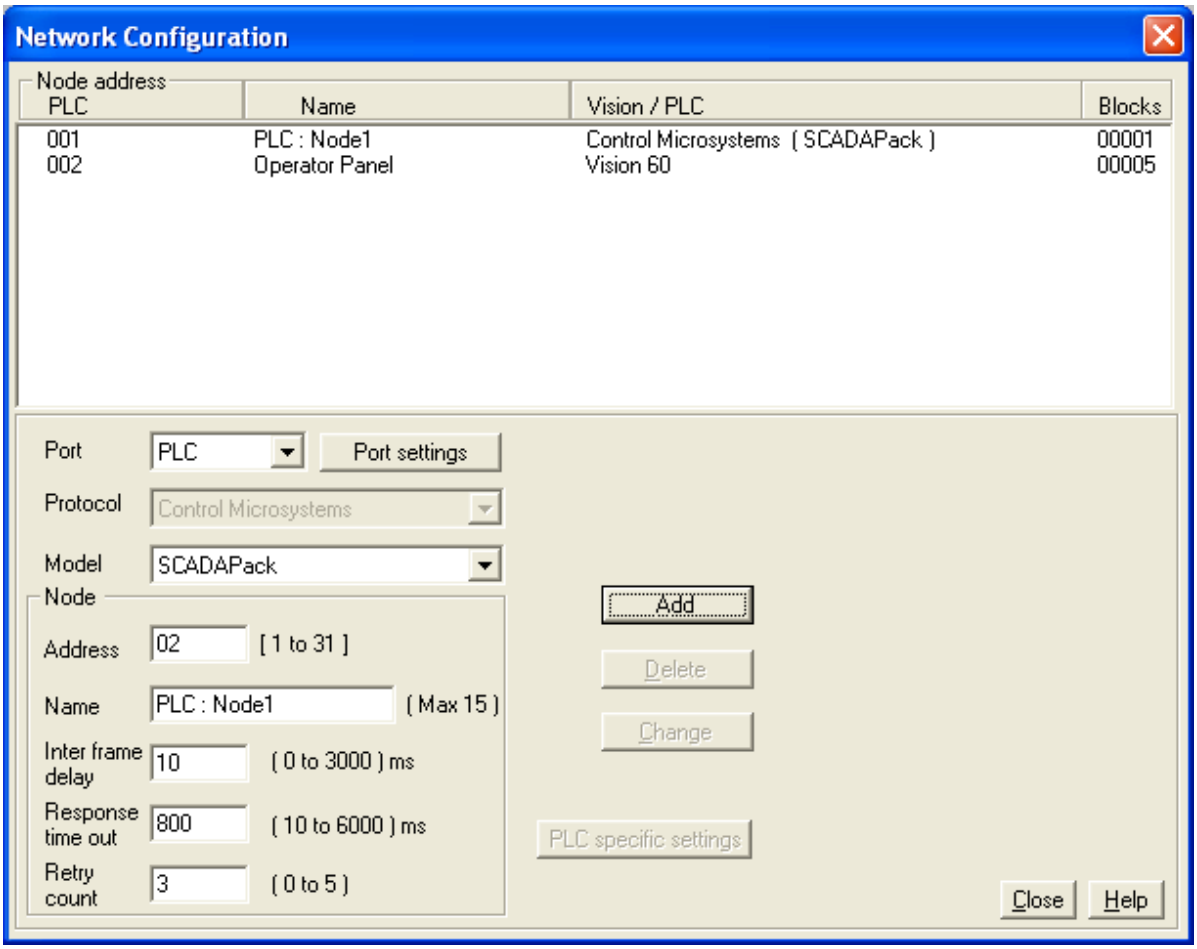
6.4.3 Configure Network Configuration

The Network Configuration dialog is used to identify the PLC with which the SCADAPack Vision will communicate.

- From the *Define* menu, select *Network Configuration*. The following dialog appears:



- Select the *Add a node* button. The four data entry fields are filled as follows:



The settings that are displayed configure the SCADAPack Vision-60 to communicate with a SCADAPack Series controller, station address 1.

- Select *Ok* to accept these settings and close the dialog.
- Select the *Close* button to accept the Network Configuration settings and close the dialog.

6.4.4 Configure Tags

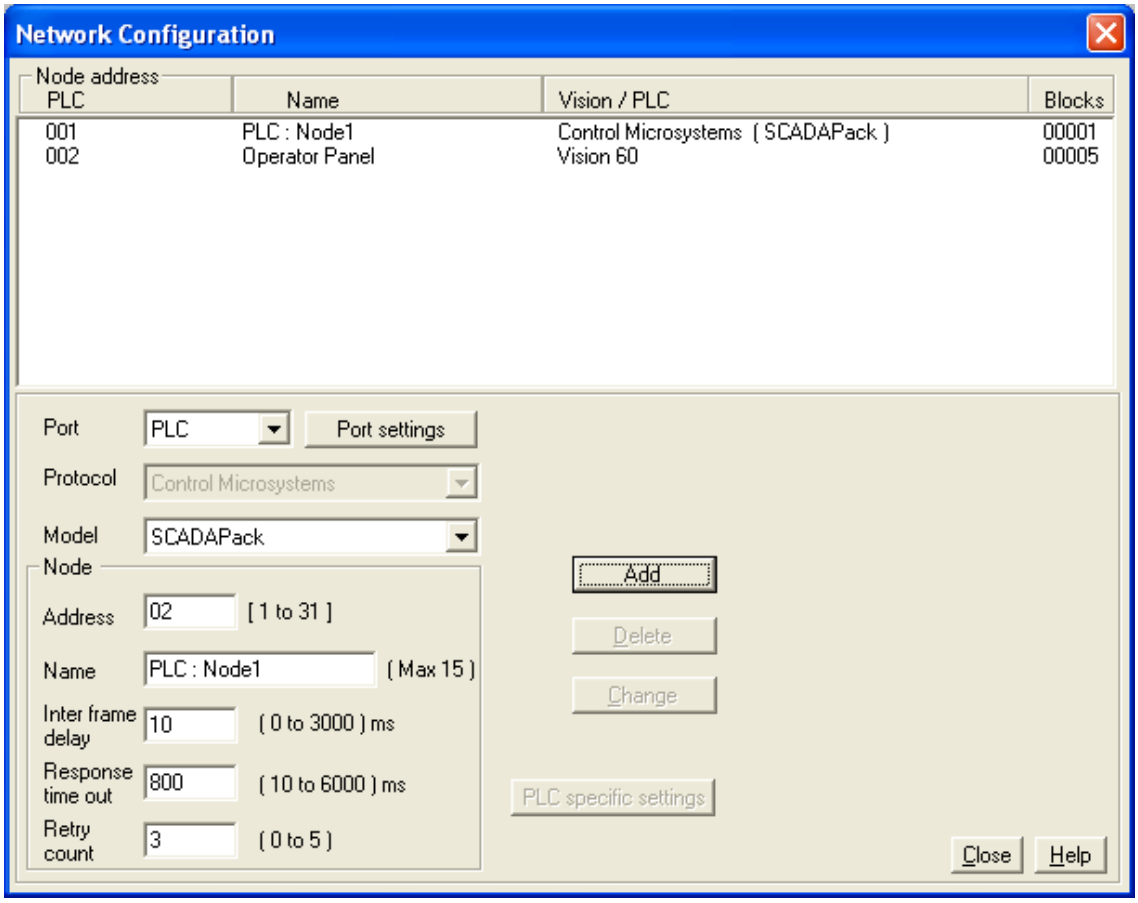
A "Tag" is an identifying name given to each data point that is to be read from or written to the PLC.

The four types of SCADAPack PLC data registers supported by the SCADAPack Vision-60 are:

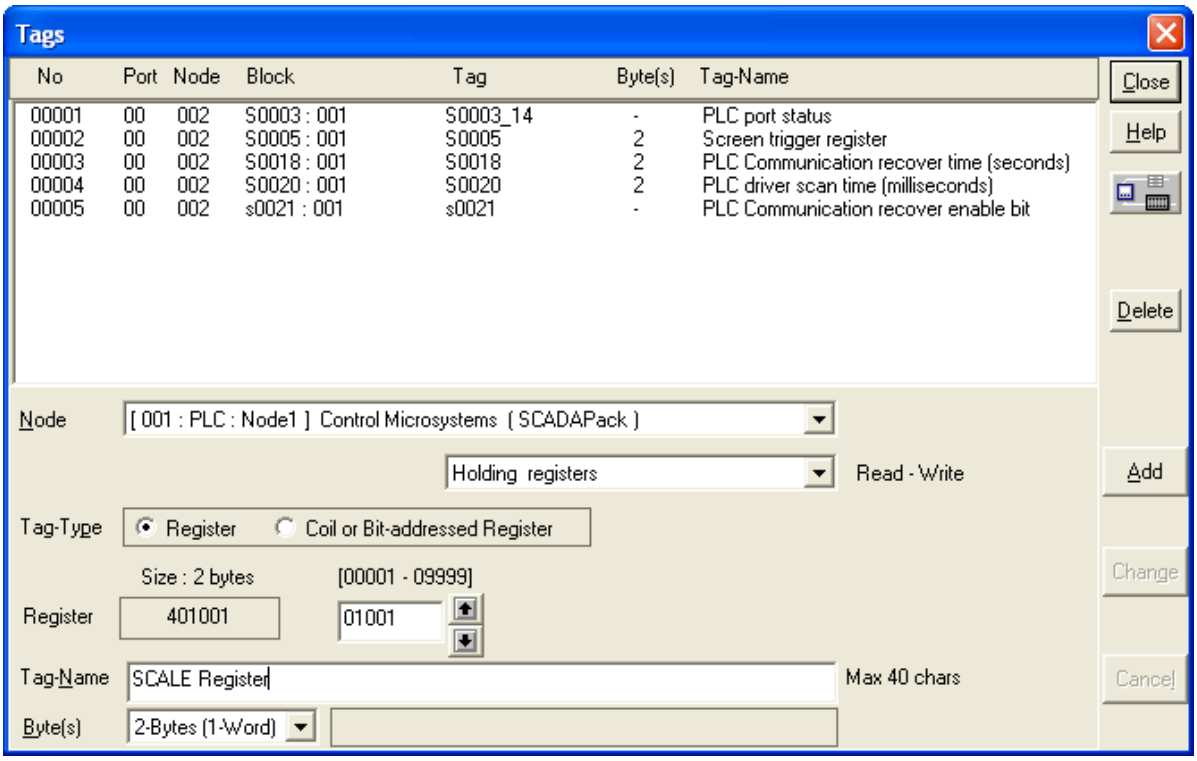
- Coils, (SCADAPack 0XXXX series)
- Input status, (SCADAPack 1XXXX series)
- Input registers, (SCADAPack 3XXXX series) and
- Holding registers (SCADAPack 4XXXX series).

To configure tags:

- From the *Define* menu, select the *Tag Database* command. The following dialog appears:



- In the *Node* data field, select the "[001: Node1] Control Microsystems (SCADAPack)" entry. This action allows for the configuration of tags related to the IO database addresses found in the SCADAPack PLC.
- Select "Holding Registers" in the *Read-Write* data field.
- Select "2-Bytes (1-Word)" in the *Byte(s)* field.
- With "01001" displayed in the *[00001 –09999]* field and the *Register Tag-Type* radio button selected, enter "SCALE Register" in the *Tag-Name* field.
- Select the *Add* button. A tag named "SCALE Register" is created which is associated with the SCADAPack IO database addresses 41001 and 41002.
- When completed, the *Tags* dialog should appear like this:



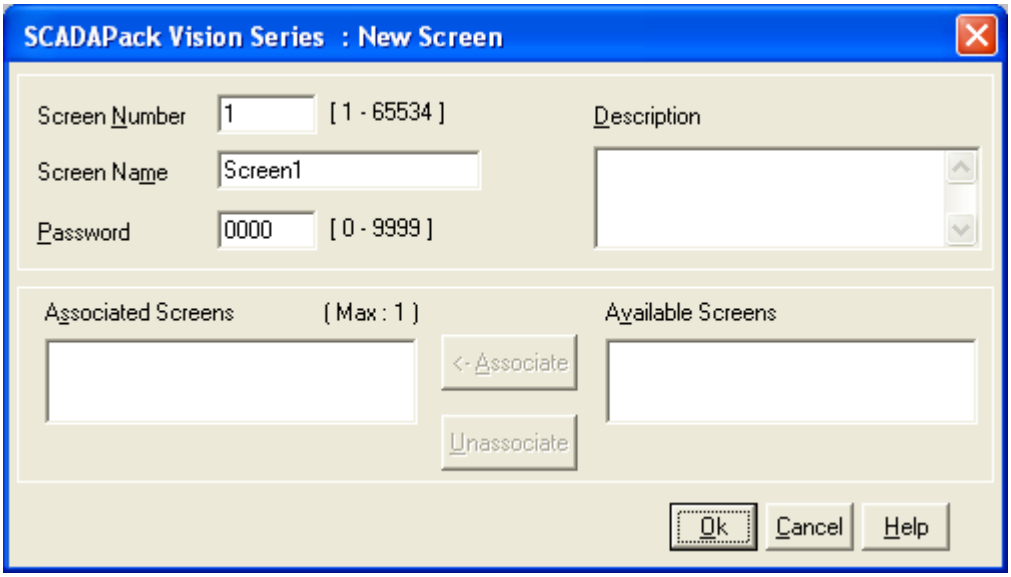
- Select the *Close* button to save the configured tags and close the dialog.

6.4.5 Configure Screens

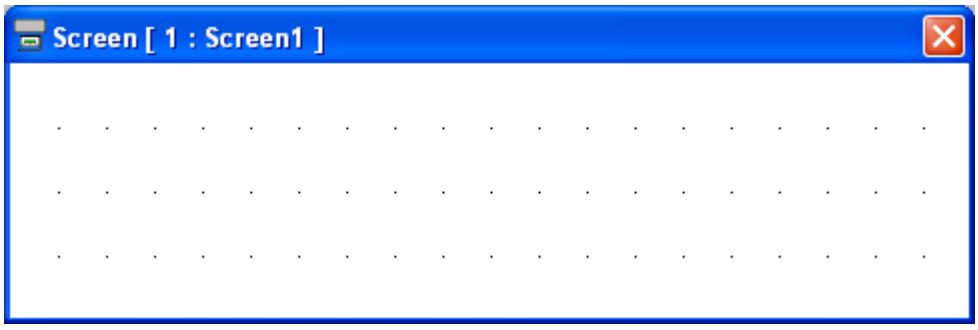
PLC data associated with tags is displayed on the SCADAPack Vision-60's LCD by configuring "screens".

To configure screens:

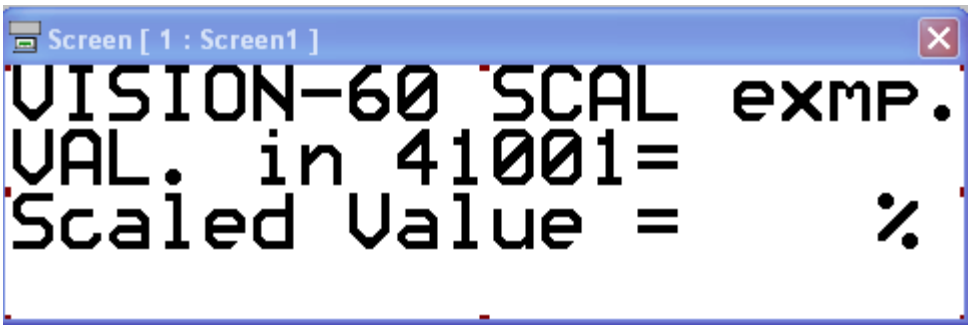
- From the *Define* menu, select the *Screens* command. The following dialog is displayed:



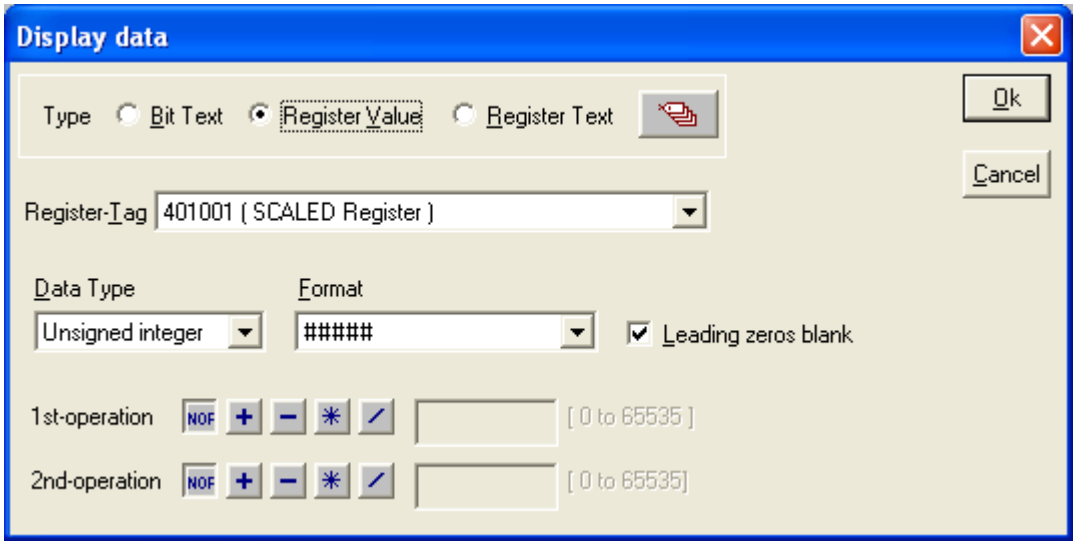
- Select the *Ok* button to accept these settings for Screen 1. The following display is displayed in the middle of the screen configuration display. This display correlates to the actual LCD on the SCADAPack Vision-60.



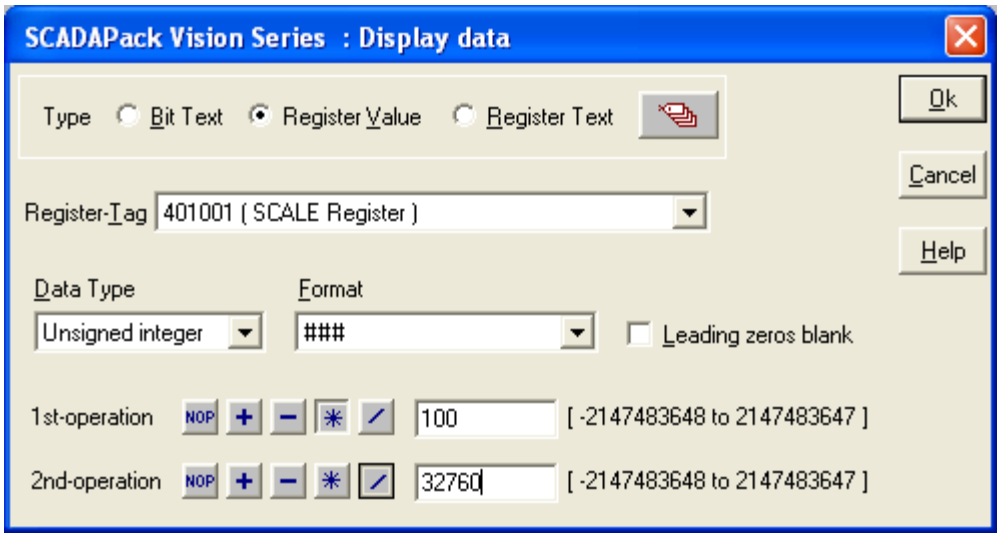
- From the *Objects* | *Alphanumeric Objects* menu, select the *Text* command. The cursor changes to the Text cursor.
- With the Text cursor, select the upper left corner of the top line of the screen display. Then click and drag to the lower right corner of the top line of the screen display. Release the mouse button.
- At the flashing cursor box, enter the text as displayed in the following screen:



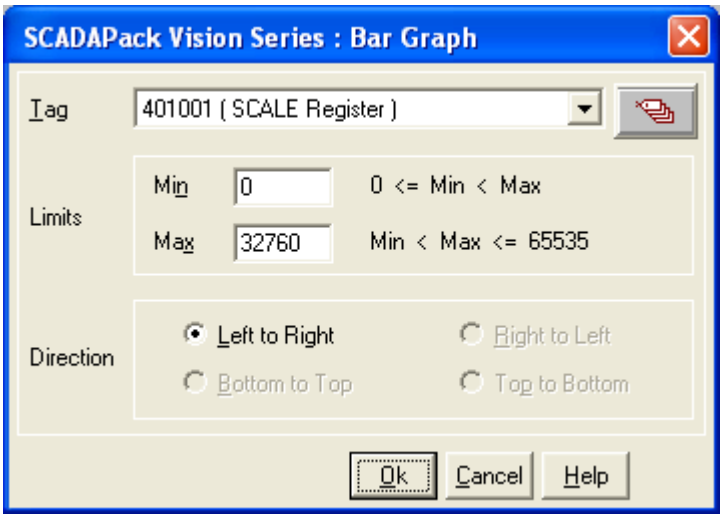
- From the *Objects* | *Alphanumeric Objects* menu, select the *Display PLC Data* command. The cursor changes to the Display Data cursor.
- With the Display Data cursor, click on the position 16 of the 2nd line of the screen display. When "Display dialog" appear on the screen select settings as shown on the below and click on Ok button. Note that 1st-operation and 2nd operation are set for the "NOP".



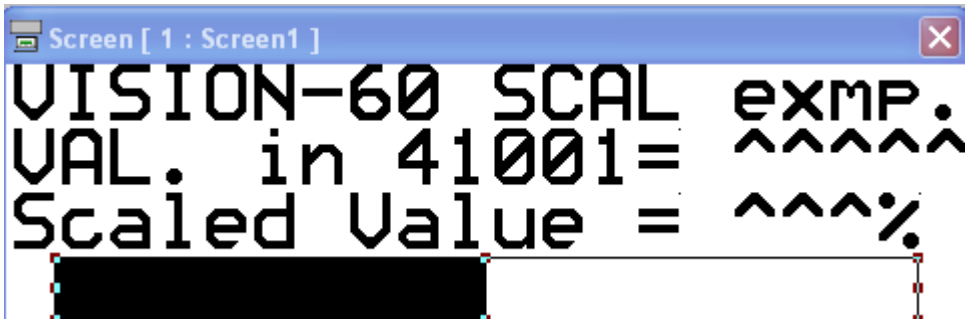
- From the *Objects* | *Alphanumeric Objects* menu, select the *Display PLC Data* command. The cursor changes to the Display Data cursor.
- With the Display Data cursor, click on the position 16 of the 3rd line of the screen display. When "Display dialog" appear on the screen select settings as shown on the below and click on Ok button. Note that 1st-operation is set to multiplying by 100 and 2nd operation for division by 32760. Display format is set for the 3 characters because output will go from 0 to 100.



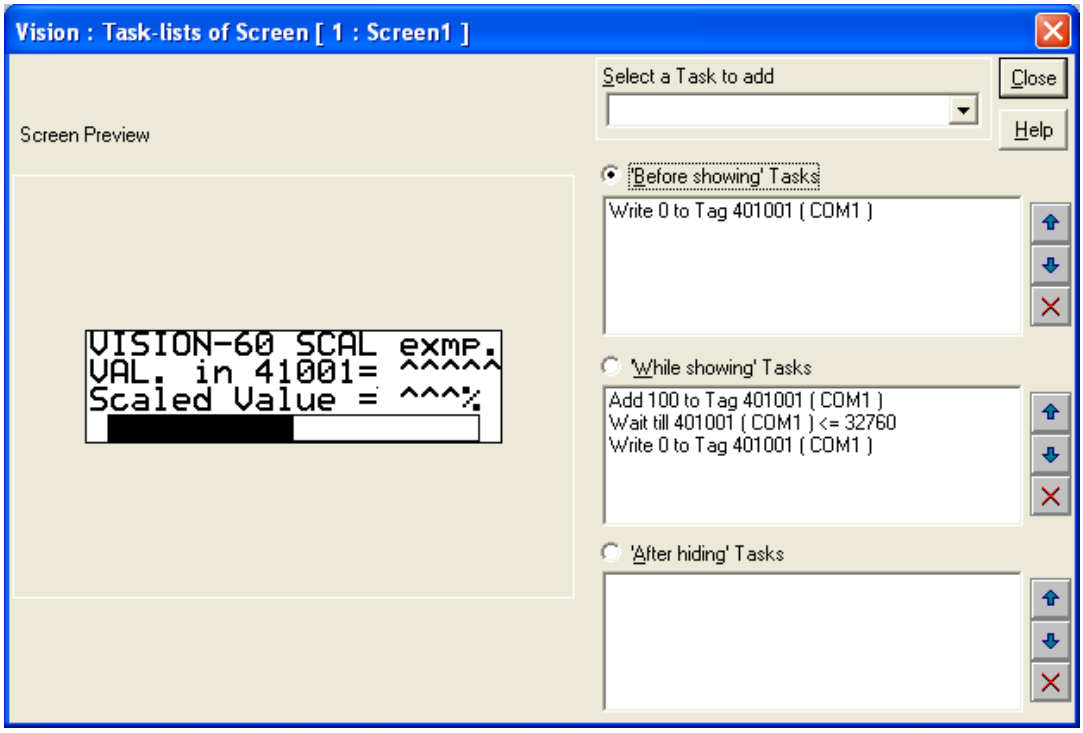
- From the *Objects* | *Alphanumeric Objects* menu, select the *Bargraph* command. The cursor changes to the Display Data cursor.
- With the Display Data cursor, click on the position 1 of the 4th line of the screen display. When "Display dialog" appear on the screen select settings as shown on the below and click on Ok button.



- Adjust the size of the bargraph so that after all this entries you can see following screen:



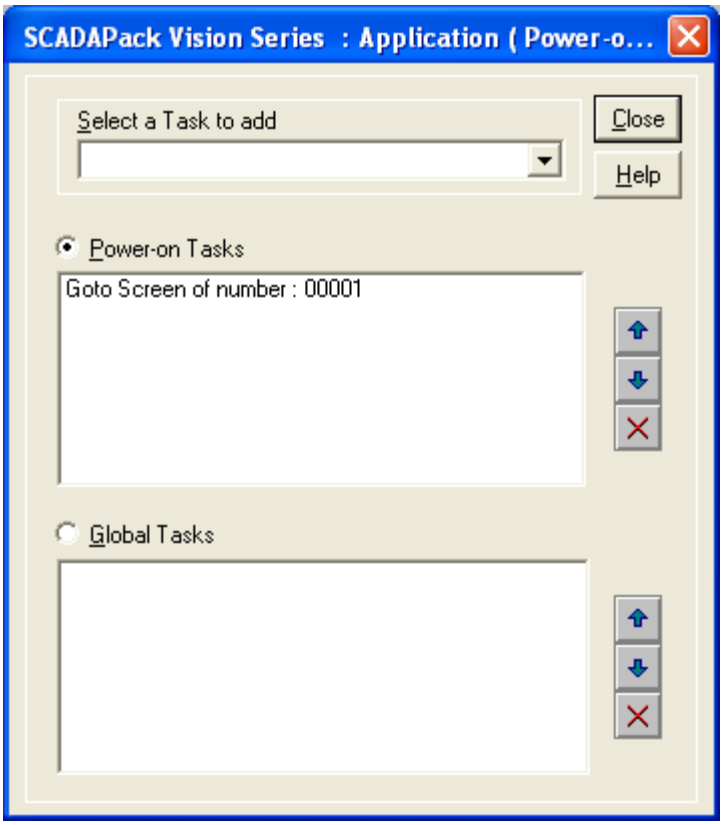
- From the *Screen objects* menu, select the “Tasklist of Screen” command.
- When “Display dialog” appear on the screen add tasks as shown below and click on Close button. Use “Select a Task to add” list to add the tasks.


Vision : Task-lists of Screen [1 : Screen1]
Screen Preview
VISION-60 SCAL exmp.
VAL. in 41001= ^^^^^
Scaled Value = ^^^%
Select a Task to add
Close
Help
'Before showing' Tasks
Write 0 to Tag 401001 (COM1)
'While showing' Tasks
Add 100 to Tag 401001 (COM1)
Wait till 401001 (COM1) <= 32760
Write 0 to Tag 401001 (COM1)
'After hiding' Tasks

6.4.6 Configure Application Task List

In this example, Screen 1 will be automatically displayed each time power is applied to the SCADAPack Vision-60. This is accomplished with the Application Task List.

- From the *Define* menu, select the *Application Tasklists* command and “Application …” dialog box will appear.
- With the *Power-0n Tasks* radio button selected, choose “Goto Screen” in the *Select a Task to add* field.
- From the *Goto Screen* dialog list that appears, select “00001 Screen1”.
- Select *Ok* to accept the configuration and close the dialog. When completed, the dialog should appear like this



- Select the *Close* button to accept the configuration and close the dialog.

6.4.7 Save the Configuration file

The SCADAPack Vision-60 configuration, completed with steps 1 to 6, can be saved to a configuration file for future use. The file has the "pzm" file extension.

To save the configuration file

- From the *File* menu, select the *Save as* command.
- Change the entry in the *File name* field to "demo60.pzm".
- Using the *Save in* field and the file folder list, locate a suitable hard drive or server location to save the configuration file.
- Select the *Save* button to save the configuration file and close the dialog.

6.4.8 Connect SCADAPack Vision-60 to PLC

In order for the SCADAPack Vision-60 operator interface to communicate with the PLC, a special null modem cable has to be used. This cable must provide 5VDC on pin 9 to power the SCADAPack Vision-60. The SCADAPack series of controllers provides the required power on pin 9.

To connect the SCADAPack Vision-60 to the PLC

- Configure a four-wire null modem cable, (see ***Figure 29: SCADAPack Vision-60 PLC Port to SCADAPack Serial Port Connection***).
- Connect the cable from the SCADAPack Vision-60 PLC Port to the PLC serial port. As soon as the connection is made, the LCD display on the SCADAPack Vision-60 should illuminate and the downloaded application should function. If the SCADAPack Vision-60 does not power up, check that 5VDC is present on pin 9 of the SCADAPack Vision-60 to PLC Port cable.

6.4.9 Initialize SCADAPack Vision-60

Initializing the SCADAPack Vision-60 erases the previously downloaded application and initializes the SCADAPack Vision-60 memory. To initialize the SCADAPack Vision-60:

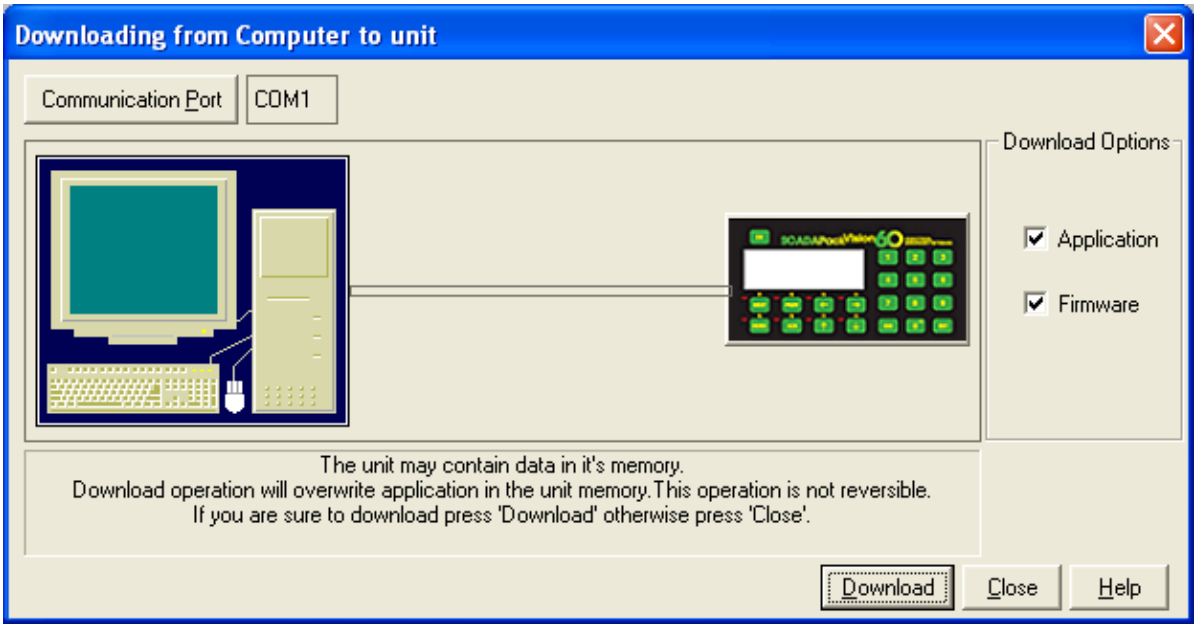
- Remove power to the SCADAPack Vision-60,
- Press and hold the F5[HOME] and ENT keys simultaneously,
- Restore power to the SCADAPack Vision-60,
- Release the keys when the message "Initializing Memory…" message appears in the display. The initialization is complete when the "VISION-60" message is displayed.

6.4.10 Download Configuration File to SCADAPack Vision-60

Once the configuration file has been created, it must be written or "downloaded" to the PLC. The file is downloaded from the computer RS-232 serial port, through a null modem cable to the SCADAPack Vision-60 Serial port.

To download the configuration file to the SCADAPack Vision-60:

- Connect a three-wire, null modem cable (see ***Figure 33: SCADAPack Vision-60 Serial Port to Computer Serial Port Connection***) from the computer RS-232 serial port to the SCADAPack Vision-60 Serial Port.
- In the SCADAPack Vision configuration software, from the *Communicate* menu, select the *Communication Port* command.
- Select the appropriate com port for the computer from the Communication Port dialog list that is displayed.
- Select *Ok* to accept the configuration and close the dialog.
- From the *Communicate* menu, select the *Download* command. The following dialog appears:



- With the *Application* radio button selected, select the Ok button to begin the download.
- As the download proceeds, a red line moving from the computer graphic towards the SCADAPack Vision-60 graphic indicates the progress.
- A dialog appears when the download is completed.
- Select *Ok* to close the dialog.

7 SCADAPack Vision Configuration Software Reference

The SCADAPack Vision is compact, panel-mounted operator interface terminal for programmable logic controllers.

The SCADAPack Vision configuration software is used to configure the SCADAPack Vision operator interface to display data read from the PLC and to allow operator-entered data to be written to the PLC.

This section of the manual describes each of the SCADAPack Vision configuration commands available from the SCADAPack Vision menu bar. The user is encouraged to read through the following sections to gain an understanding of the many programming features available.

7.1 File Menu

The *File* menu contains commands to create, open, and save SCADAPack Vision configuration files; and commands to print configuration files.

7.1.1 New

The *New* command opens a new SCADAPack Vision configuration file for the SCADAPack Vision operator interface, the SCADAPack PLC is chosen as the default PLC, the network configuration contains the SCADAPack Vision, the tag database is cleared, all screens are deleted and all key functions are reset.

If the current file has not been saved, the program warns you to save the current file. You may save the changes, discard the changes or cancel the New command.

7.1.2 Open

The *Open* command loads a SCADAPack Vision configuration file from disk into the program. The file replaces the existing file in the editor. If the current file has not been saved, the editor warns you to save the current file. You may save the changes, discard the changes or cancel the Open command.

The *Open* command displays the *Open File* dialog box. This dialog box is used to select the file to open. SCADAPack Vision configuration files end with the file extension PZM. The dialog box displays these files by default.

7.1.3 Close

The *Close* command closes the currently open configuration file without closing the SCADAPack Vision program.

If the current file has not been saved, the program warns you to save the current file. You may save the changes, discard the changes or cancel the Close command.

Pressing *Ctrl-F4* selects the *Close* command from the keyboard.

7.1.4 Save

The *Save* command stores the currently open file on disk. If the current file has not yet been named, the *Save Vision Application* dialog box appears. The file name and working directory can be selected from this dialog box. The title bar at the top of the editor window shows the current file name.

Pressing *F2* selects the *Save* command from the keyboard.

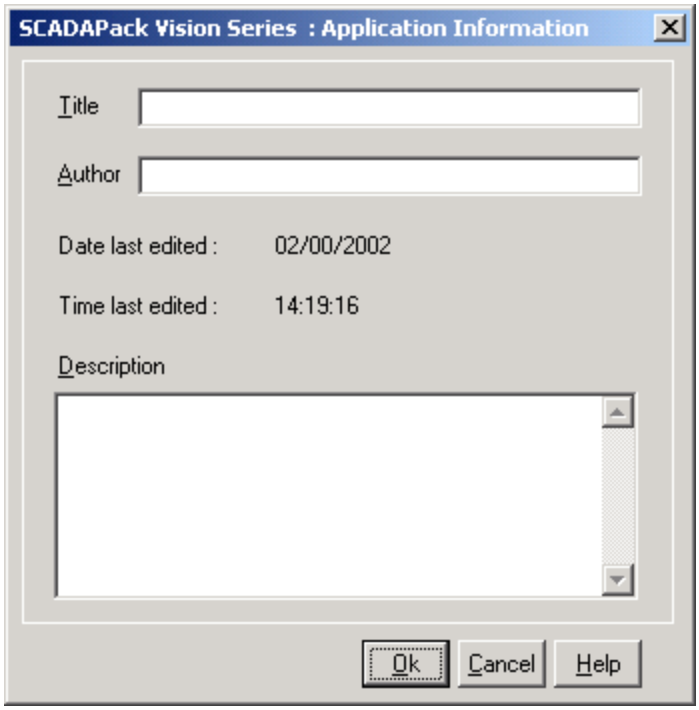
7.1.5 Save as

The *Save as* command stores a file with a different name or location than the current file. The *Save Vision Application* dialog box is used to specify the file name and directory in which to save the file.

SCADAPack Vision configuration files end with the file extension PZM. The editor uses the extension PZM automatically, if you do not type it.

7.1.6 Information

The Information command displays application information in the following dialog.



This dialog is used to add pertinent configuration file information for future reference.

The *Title* field allows for the entry of an application title containing up to a maximum of 50 alphanumeric characters plus spaces.

The *Author* field allows for the entry of the integrator's name containing up to a maximum of 50 alphanumeric characters plus spaces.

The *Date last edited* field contains the date when the currently open application file was last saved.

The *Time last edited* field contains the time when the currently open application file was last saved.

The *Description* field allows for the entry of descriptive text containing up to a maximum of 500 alphanumeric characters plus spaces.

7.1.7 Exit

The *Exit* command terminates the SCADAPack Vision configuration program. The editor warns you to save the current file, if it had changed since the last save. You may save the changes, throw away the changes or cancel the *Exit* command.

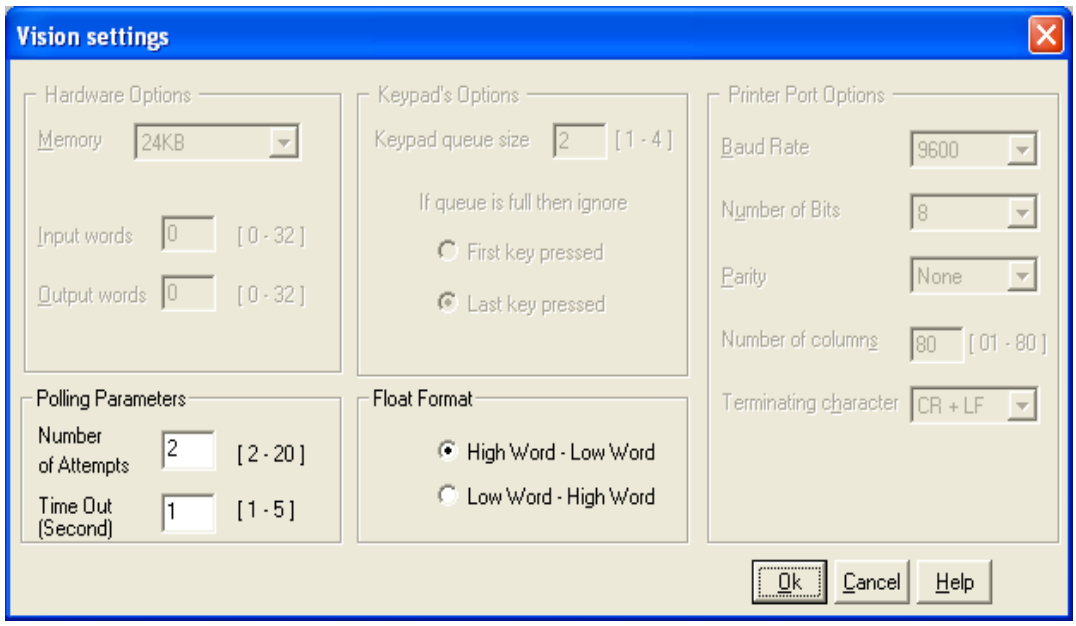
Press *Alt-F4* to select the *Exit* command from the keyboard.

7.2 Define Menu

The *Define* menu contains commands to define SCADAPack Vision settings, network configuration, tags, screens, application keys, alarms and application tasklists.

7.2.1 Vision Settings

The SCADAPack *Vision's Settings* command defines the SCADAPack Vision's polling parameters and floating-point-variable format settings. The command opens the *Vision's settings* dialog.

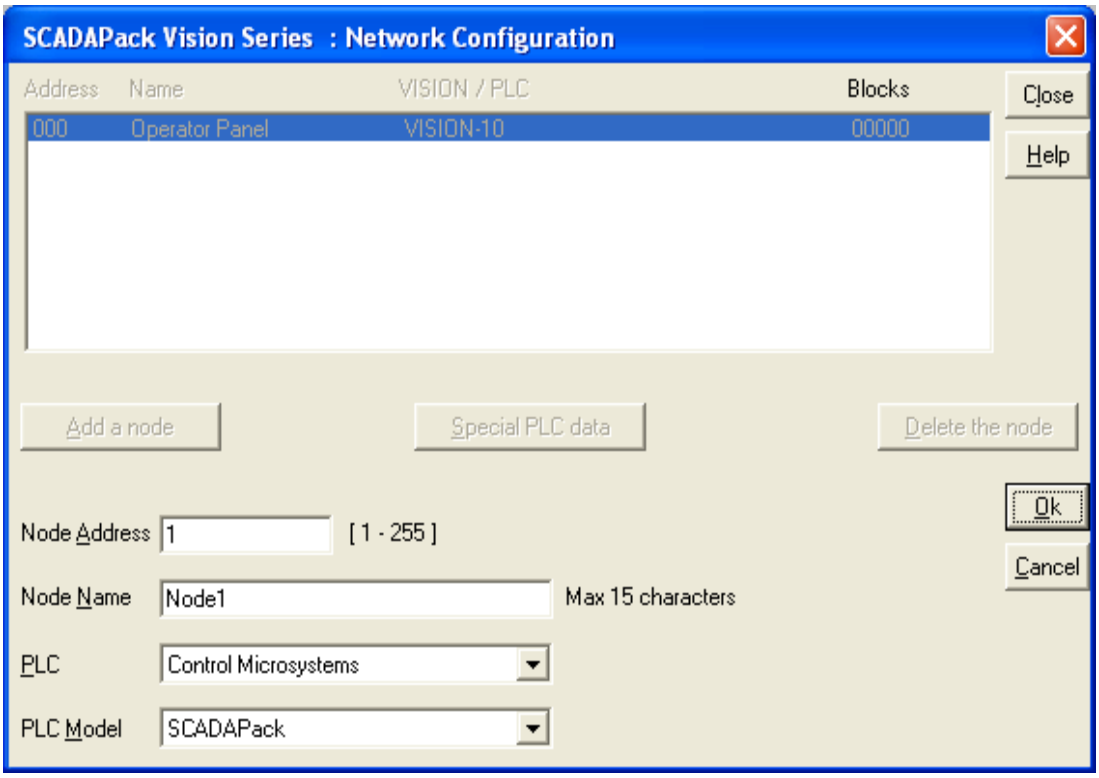


Except for the polling parameters and floating-point variable format, other settings are disabled and do not have to be adjusted.

Note: A printer port is not available on the SCADAPack Vision-10 and SCADAPack Vision-60. The *Printer Port Options* are therefore not supported.

7.2.2 Network Configuration

The *Network Configuration* command defines the Modbus station address for the SCADAPack Vision and the PLC. The command opens the *Network Configuration* dialog.



Select the *Add a node* button to add a PLC to the network configuration.

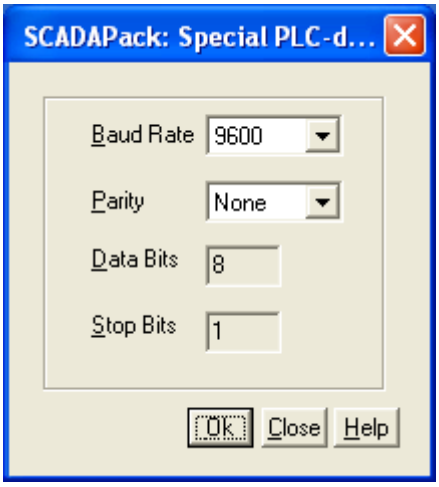
- Enter the Modbus station address into the Node Address field. Valid addresses are 1 to 255. The default is 1.
- Enter a node name into the Node Name field. A maximum of 15 alphanumeric characters are allowed. The default is Node1.
- Choose a PLC manufacturer from the PLC selection field. The default is Control Microsystems.
- Choose a PLC model from the PLC Model selection field. The default is SCADAPack.
- Click on OK to add node to the list or Cancel button to cancel operation

Select the *Delete the node* command to delete the currently selected node. The SCADAPack Vision Series node cannot be deleted.

The *Close* command saves the current settings and closes the dialog.

The *Help* command displays the on-line help for the dialog.

When *Control Microsystems (SCADAPack)* has been selected, the *Special PLC Data* button becomes active. Select the *Special PLC Data* command to open the *Special PLC Data* dialog.



This dialog configures the communication parameters for the PLC port.

The *Baud Rate* edit field allows for the selection of 4800, 9600 or 19200 baud. The default is *9600*.

The *Parity* edit field allows for the selection of Odd, Even or None parity. The default is *None*.

The *Data Bits* are fixed at 8.

The *Stop Bits* are fixed at 1.

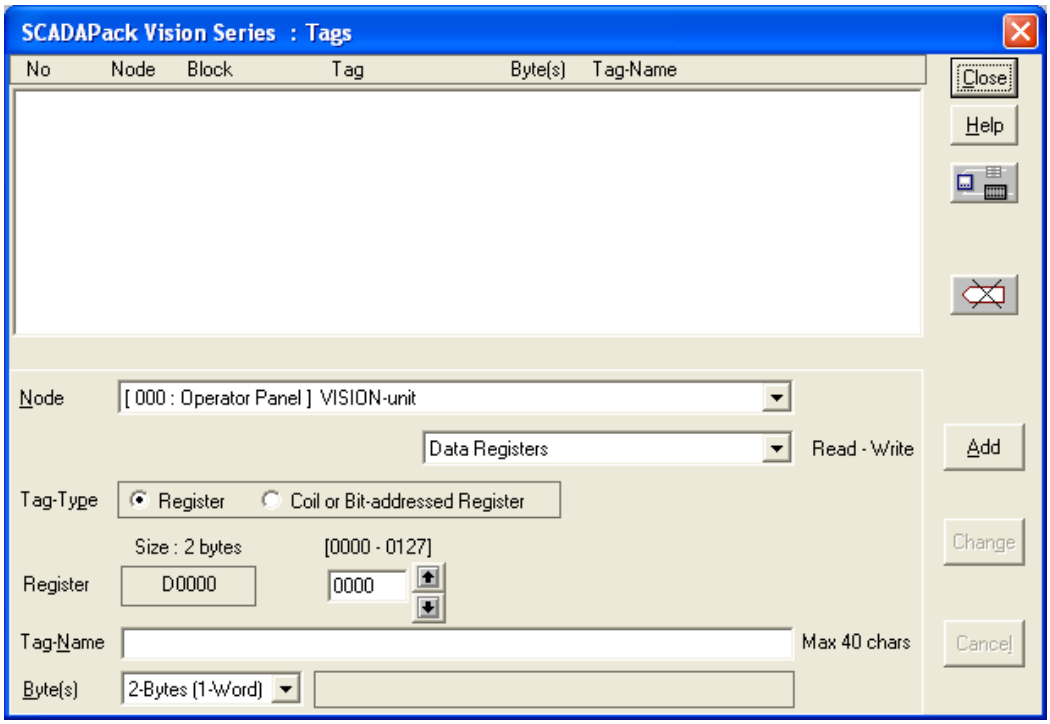
The *Ok* button accepts changes made to the current configuration and closes the dialog.

The *Close* button discards changes made to the current configuration and closes the dialog.

The *Help* button displays information for the dialog.

7.2.3 Tag Database

The *Tag Database* command defines the tag database. A "tag" is an identifying name used by the SCADAPack Vision that is given to each data point to be read from, or written to, the PLC. The command opens the *Tags* dialog.



The *Node* selection field contains the SCADAPack Vision and a list of PLCs configured in the *Network Configuration* dialog. To create tags internal to the SCADAPack Vision, select *Vision – unit*. To create tags to allow the SCADAPack Vision to read/write to the SCADAPack PLC, select *Control Microsystems (SCADAPack).*

The *Read – Write* selection field contains the types of data supported by the device that appears in the *Node* field.

There are two types of internal SCADAPack Vision registers: Data Registers and Retentive Registers.

1. Data Registers, (address range 0000 to 0127).

Values contained in the registers reside in the SCADAPack Vision only. Data Register values are reset to zero upon SCADAPack Vision power-up.

There are four reserved Data Registers: D0124 to D0127.

- D0124: The “While Showing Tasks” Data Register provides delays between the execution of tasks configured in the “While Showing Tasks” lists. Valid values are 0 to 255 in 20 msec increments. For example, a 1 sec delay requires a value of 50 for D0124.
- D0125: The “Global Tasks” Data Register provides delays between the execution of tasks configured in the “Global Tasks” list. Valid values are 0 to 255 in 20 msec increments. For example, a 1 sec delay requires a value of 50 for D0125.
- D0126: The “Read Alarm” Data Register provides delays between attempts to read configured alarms. Valid values are 0 to 255 in 20 msec increments. For example, a 1 sec delay requires a value of 50 for D0126.
- D0127: The “Read Data Blocks” Data Register provides delays between attempts to read blocks of data from the SCADAPack Vision and PLC. Valid values are 0 to 255 in 20 msec increments. For example, a 1 sec delay requires a value of 50 for D0127.

2. Retentive Registers, (address range 0000 to 0999).
    - Retentive Registers retain their values upon SCADAPack Vision power-up.

There are four types of SCADAPack PLC data registers: Coil, Input Status, Input Registers and Holding Registers. Values contained in these registers are written to or read from the PLC.

- Coil (address range 00001 to 04089),
- Input status (address range 10001 to 14089),
- Input register (address range 30001 to 31024) and
- Holding register (40001 to 49999).

The *Tag – Type* radio-button field allows for the selection of either a *Register* tag type or *Coil or Bit-addressed Register* tag-type. The data-type displayed in the *Read – Write* field determines which *Tag – Type* radio button is active.

The register or coil *Size:* field displays the number of bits or bytes used by the register. The Modbus address is displayed just below. Note: a leading "0" is placed in the Modbus address. This differs from the SCADAPack IO database register numbering convention. For example, SCADAPack Vision tag address 300001 is synonymous with SCADAPack IO database address 30001.

To the right of the register or coil *Size:* field, the range of valid address points is displayed. Just below this is a field to allow for the selection of the address. This address is offset from the base address for the data-type selected in the *Read – Write* field. For example, entering a data-type of Holding Registers in the *Read – Write* field, and a value of 100 in the address selection field results in a Modbus register of 400100. This is synonymous with the SCADAPack IO database address 40100.

The *Tag-Name* field allows for the configuration of the tag name. Tag names may consist of up to a maximum of forty alphanumeric characters and spaces. The *Byte(s)* field allows for the configuration of the number of bytes corresponding to the register. Valid entries are *single-byte*, *two-byte (one word)*, *four-byte (two words)* or *eight-byte (four words)* data registers. This field is left blank if the *Read – Write* field contains either *Coil* or *Input status*.

The *Close* command saves the current settings and closes the dialog.

The *Help* command displays the on-line help for the dialog.

The *Network Configuration* button opens the *Network Configuration* dialog.

The *Delete Tag* button deletes the tag that is currently selected in the display list.

The *Add* button adds the tag name that is currently displayed in the *Tag-Name* field to the tag database. Each tag must have a unique name and register address. If there is any tag name conflict, an error message is displayed.

The *Change* button allows for the changing of any configuration parameters for the tag that is currently highlighed in the display list. If there are no tags highlighted in the display list, the button is greyed.

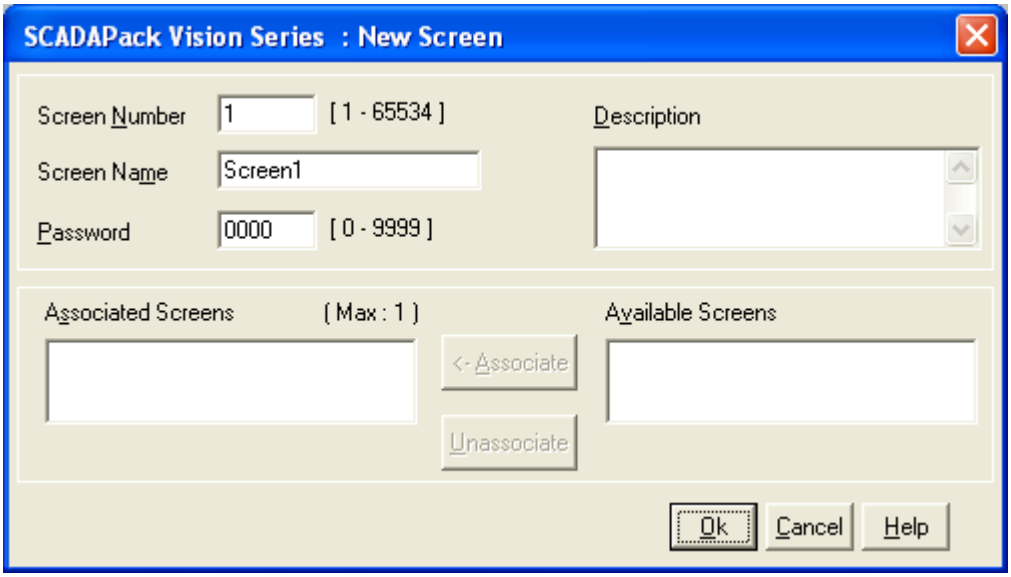
The *Cancel* command discards all configuration changes and closes the dialog.

7.2.4 Screens

The *Screens* command defines the data display/entry screens and local application keys.

7.2.4.1 New Screens Dialog

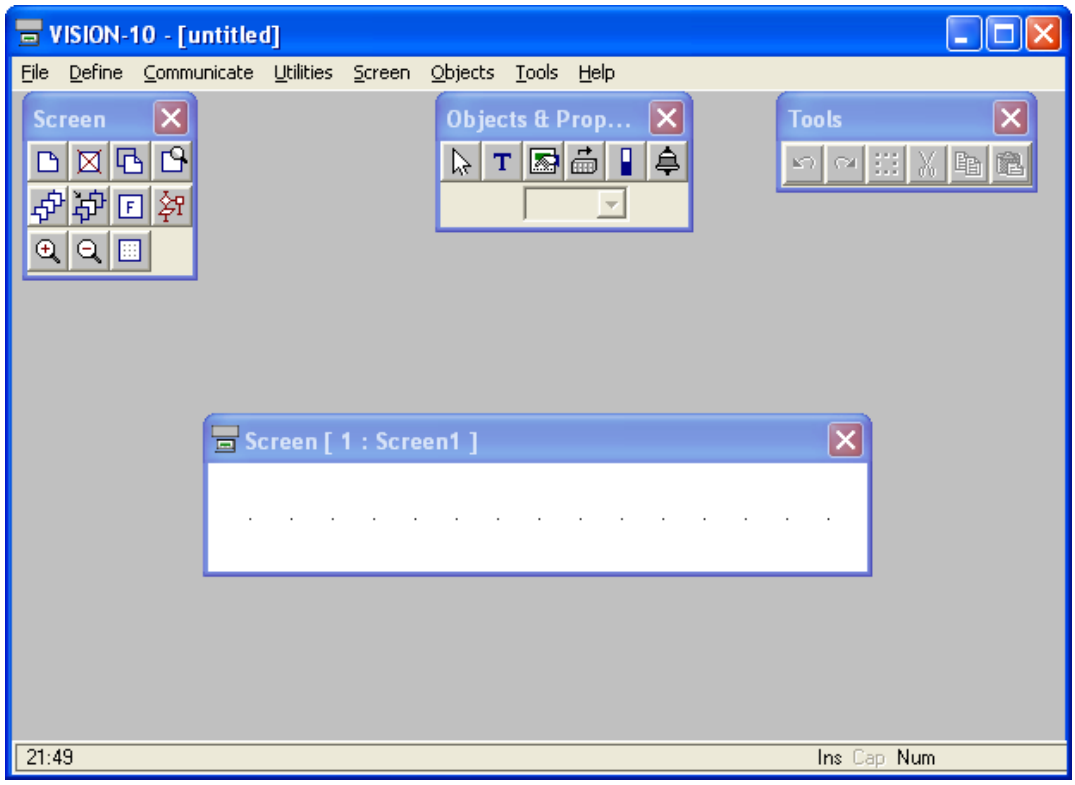
When first accessing the *Screens* command, the *New Screen* dialog is opened. Refer to the *New* command in the *Screens* menu for more information.

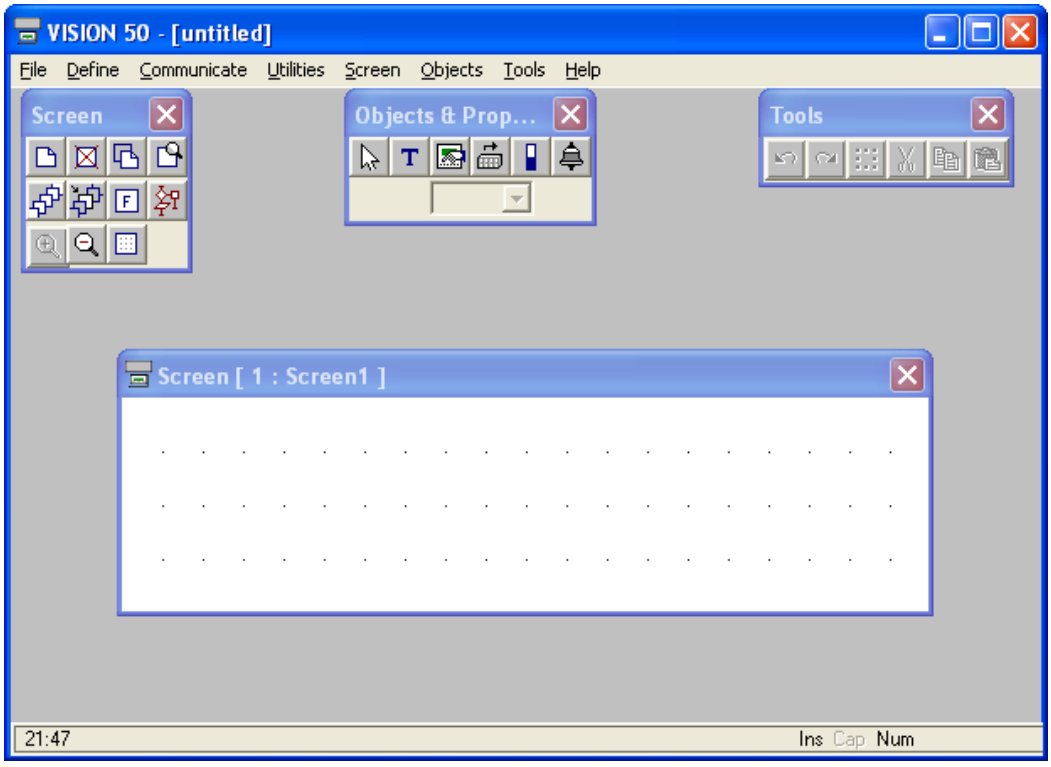


7.2.4.2 Screen Configuration Dialog

The *Screen* configuration dialog contains commands used to create and edit data display screens. These commands are grouped into three toolbars. The actual screen display is represented as an edit box.

The dialog for the SCADAPack Visions are identical with exception for the screen size and it has the following layout.


VISION-10 - [untitled]
File Define Communicate Utilities Screen Objects Tools Help
Screen
Objects & Prop...
Tools
Screen [1 : Screen1]
21:49
Ins Cap Num


VISION 50 - [untitled]
File Define Communicate Utilities Screen Objects Tools Help
Screen
Objects & Prop...
Tools
Screen [1 : Screen1]
21:47
Ins Cap Num

7.2.4.3 Menu Bar

In addition to the default menu commands, the *Screen Configuration* dialog activates three additional menu commands, *Screen*, *Objects* and *Tools*. These menu commands are available only when the *Screen Configuration* dialog is the active dialog. Refer to section ***7.5-Screen Menu***, ***7.6-Objects Menu***, and ***7.7-Tools Menu*** for information.

7.2.4.4 Screen Toolbar

The Screen toolbar contains the following commands.

New Screen:	Opens the *New Screen* dialog. This is the same as the *New* command in the *Screen* menu.
Delete Screen:	Deletes the current screen. This is the same as the *Delete* command in the *Screen* menu.
Duplicate Screen:	Creates a duplicate copy of the current screen. This is the same as the *Duplicate* command in the *Screen* menu.
Screen Information:	Displays additional screen information. This is the same as the *Screen Information* command in the *Screen* menu.
All Screens:	Displays all the screens simultaneously. This is the same as the *View All Screens* command in the *Screen* menu.
Select Screen:	Selects a screen. This is the same as the *Select Screens* command in the *Screen* menu.
Screen Keys:	Configures local application keys. This is the same as the *Keys for Screen* command in the *Screen* menu.
Screen Tasklists:	Configures local tasklists. This is the same as the *Task-lists of Screen* command in the *Screen* menu.
Zoom In:	Zooms into the *Screen Display Edit Box*. This is the same as the *Zoom In* command in the *Screen* menu.
Zoom Out:	Zooms out from the *Screen Display Edit Box*. This is the same as the *Zoom Out* command in the *Screen* menu.
Alphanumeric Grid:	Displays alphanumeric grid in Screen Display Edit Box. This is the same as the *Show/Hide Alphanumeric Grid* command in the *Screen* menu.
Character Set:	Displays the character set for text-display objects. This is the same as the *Character Set* command in the *Screen* menu.

7.2.4.5 Objects & Properties Toolbar

The *Objects & Properties* toolbar contains the following commands.

Selector: Selects objects on the *Screen Display Edit Box*. This is the same as the *Selector* command in the *Objects* menu.

Text: Inserts text-display objects into the *Screen Display Edit Box*. This is the same as the *Text* command in the *Objects* | *Alphanumeric Objects* menu.

Data Entry: Inserts data entry fields into the *Screen Display Edit Box*. This is the same as the *Data Entry* command in the *Objects* | *Alphanumeric Objects* menu.

Display Data: Inserts SCADAPack Vision or PLC data-display fields into the *Screen Display Edit Box*. This is the same as the *Display PLC Data* command in the *Objects* | *Alphanumeric Objects* menu.

Bargraph: Inserts bargraph display field into the *Screen Display Edit Box*. This is the same as the *Bargraph* command in the *Objects* | *Alphanumeric Objects* menu.

Alarm(s): Inserts alarm display field into the *Screen Display Edit Box*. This is the same as the *Alarm* command in the *Objects* | *Alphanumeric Objects* menu.

Flash: Configures flash properties of text and data-display fields. This is the same as the *Flash* command in the *Objects* menu.

Animation: Configures animation properties of text and data-display fields. This is the same as the *Animation Properties* command in the *Objects* menu.

7.2.4.6 Tools Toolbar

The *Tools* toolbar contains the following commands.

Undo: Un-does the previous action. This is the same as the *Undo* command in the *Tools* menu.

Redo: Re-does the previous Undo action. This is the same as the *Redo* command in the *Tools* menu.

Select All: Selects all objects in the *Screen Display Edit Box*. This is the same as the *Select All* command in the *Tools* menu.

Cut: Cuts selected objects from the *Screen Display Edit Box* into the memory buffer. This is the same as the *Cut* command in the *Tools* menu.

Copy: Copies selected objects from the *Screen Display Edit Box* into the memory buffer. This is the same as the *Copy* command in the *Tools* menu.

Paste: Pastes objects from the memory buffer into the *Screen Display Edit Box*. This is the same as the *Paste* command in the *Tools* menu.

7.2.4.7 Screen Display Edit Box

The *Screen Edit Display Box* is used to configure the SCADAPack Vision display screens. Configured objects appear exactly on the SCADAPack Vision display screen as they appear in the *Screen Edit Display Box*. There are two lines, each containing a maximum of 16 characters, for SCADAPack Vision-10 or four lines, each containing a maximum of 20 characters for SCADAPack Vision-60. A snap grid may be superimposed on the box and the box may be zoomed into or away from.

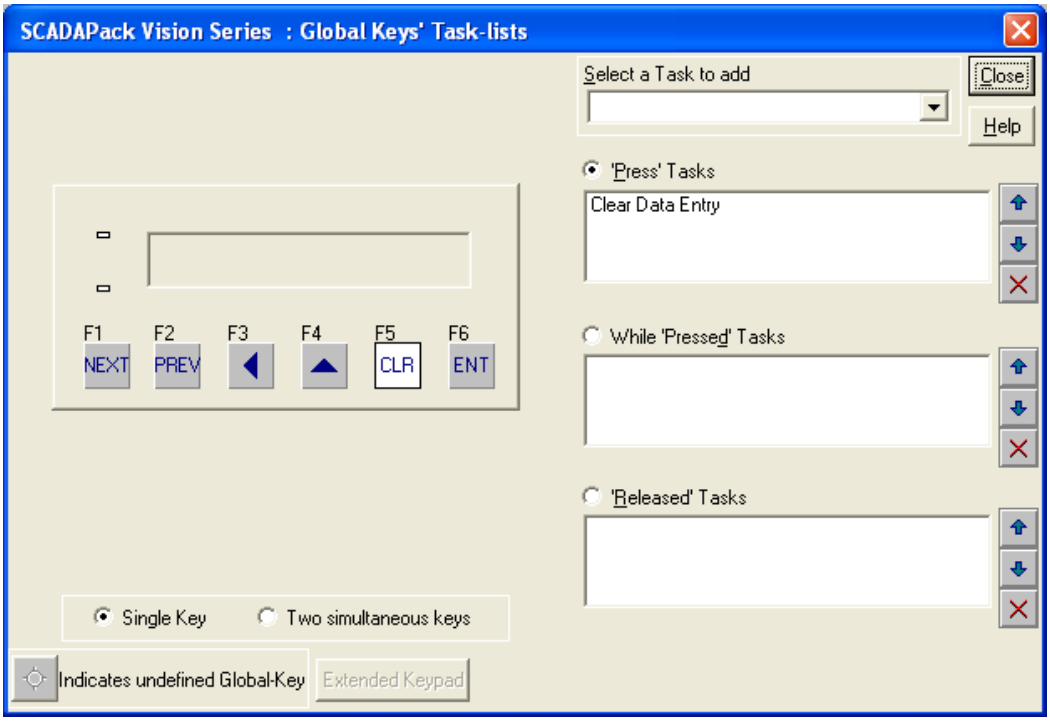
To close the entire Screen-editing session, select the button. This is the same as the *Close Screens session* command in the *Screen* menu.

7.2.5 Global Keys

The G*lobal Keys* command defines the "global" action of keys. "Global" refers to all screens. Actions configured in this dialog affect a key's action on all screens, unless local actions have been configured. The command opens the *Global Keys' Task-lists* dialog.

7.2.5.1 Configurable Keys for SCADAPack Vision-10

The configurable keys are labeled F1 through F6 and NEXT, PREV, Left Arrow, Up Arrow, CLR and ENT.



The default configuration for these keys is as follows:

F1 NEXT (Go to next screen)

F2 PREV (Go to previous screen)

F3 Left Arrow (shift value to the left)

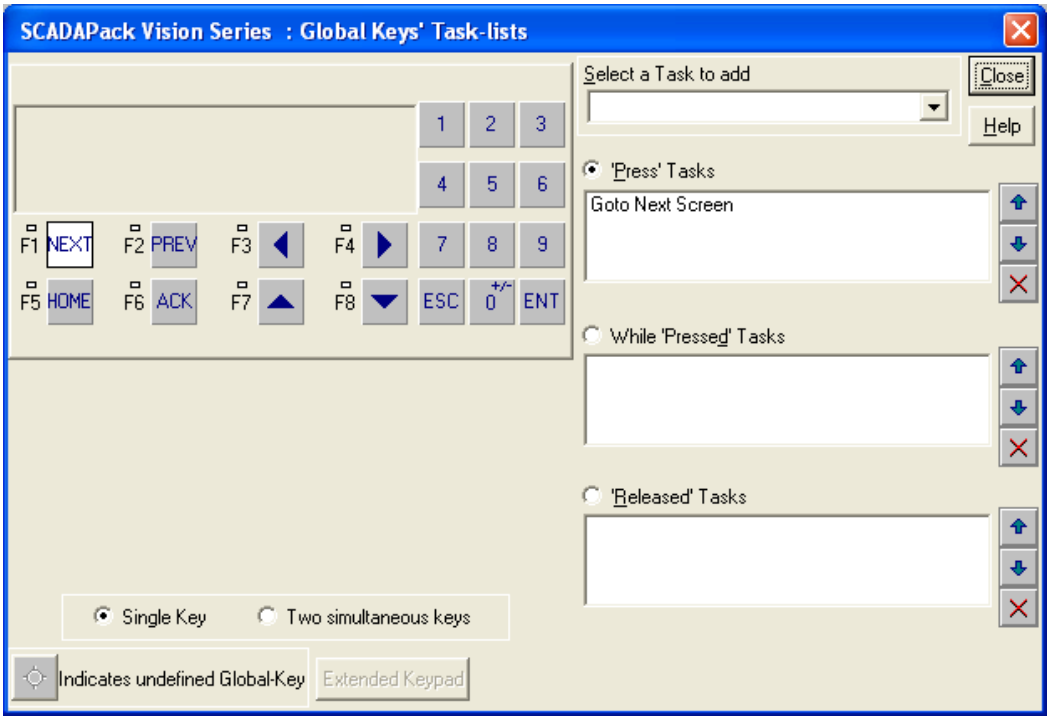
F4 Up Arrow (increase digit by 1)

F5 CLR (clear data entry)

F6 ENT (accept data entry)

7.2.5.2 Configurable Keys for SCADAPack Vision-50

All keys on the SCADAPack Vision-50 are configurable.



The default configuration for these keys is as follows:

F1 NEXT (Go to next screen)

F2 PREV (Go to previous screen)

F3 Left Arrow (Move Cursor to Left)

F4 Right Arrow (Move Cursor to Right)

F5 HOME (Go to Screen 1)

F6 ACK (Acknowledge Alarm)

F7 Up Arrow (Increase Digit by 1)

F8 Down Arrow (Decrease Digit by 1)

ESC (Cancel Data Entry)

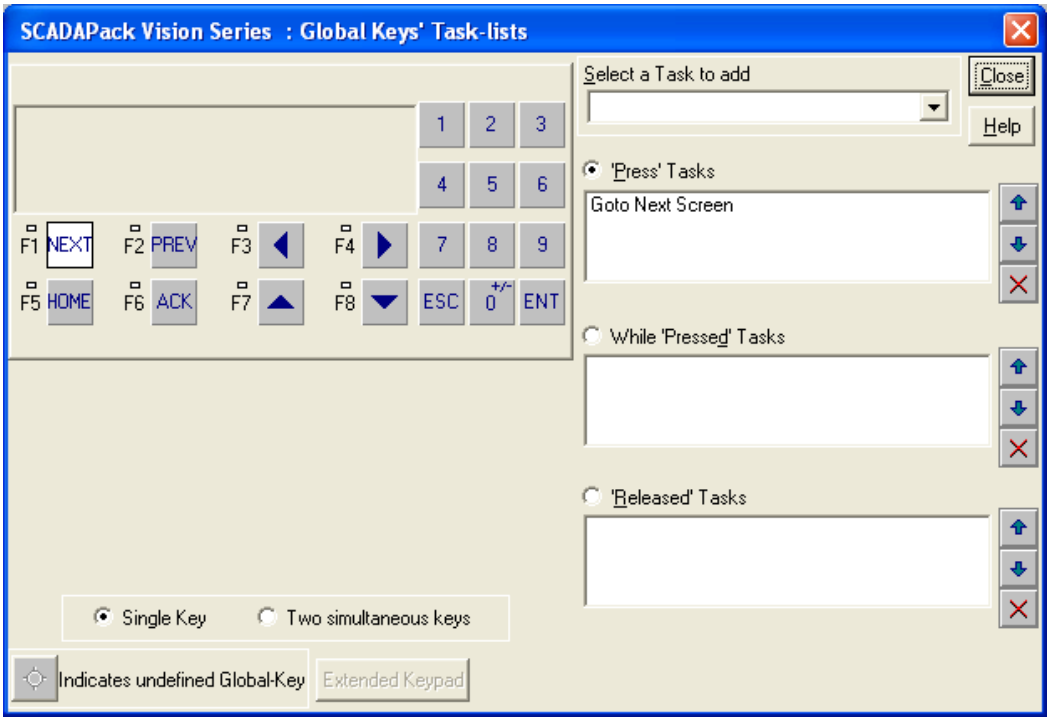
ENT (Accept Data Entry)

0+/- (Sign Key +/- and 0)

1-9 (Numeric Keys 1-9)

7.2.5.3 Configurable Keys for SCADAPack Vision-60

All keys on the SCADAPack Vision-60 are configurable.



The default configuration for these keys is as follows:

F1 NEXT (Go to next screen)

F2 PREV (Go to previous screen)

F3 Left Arrow (Move Cursor to Left)

F4 Right Arrow (Move Cursor to Right)

F5 HOME (Go to Screen 1)

F6 ACK (Acknowledge Alarm)

F7 Up Arrow (Increase Digit by 1)

F8 Down Arrow (Decrease Digit by 1)

ESC (Cancel Data Entry)

ENT (Accept Data Entry)

0+/- (Sign Key +/- and 0)

1-9 (Numeric Keys 1-9)

7.2.5.4 Key Combination

The *Single Key* radio button configures an action to be controlled by a single key.

The *Two simultaneous keys* radio button configures an action to be controlled by two simultaneously pressed keys.

Undefined Global key: Indicates that the global key is undefined.

The *Select a Task to add* field is used to select one of 18 available tasks. Refer to section **7.9-*Key Task Definitions*** section for a detailed explanation of these tasks.

The *'Press' Tasks* radio button activates the *'Press' Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *'Press' Tasks* radio button is first selected. *'Press' Tasks* are executed one time when the key is pressed and in the order that they appear in the list.

The *While 'Pressed' Tasks* radio button activates the *While 'Pressed' Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *While 'Pressed' Tasks* radio button is first selected. *While 'Pressed' Tasks* are executed continually while the key is pressed and in the order that they appear in the list.

The *'Released' Tasks* radio button activates the *'Released' Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *'Released' Tasks* radio button is first selected. *'Released' Tasks* are executed one time when the key is released and in the order that they appear in the list.

Move Task Up: Moves the currently selected task one position up the list.

Move Task Down: Moves the currently selected task one position down the list.

Delete Task: Deletes the currently selected task.

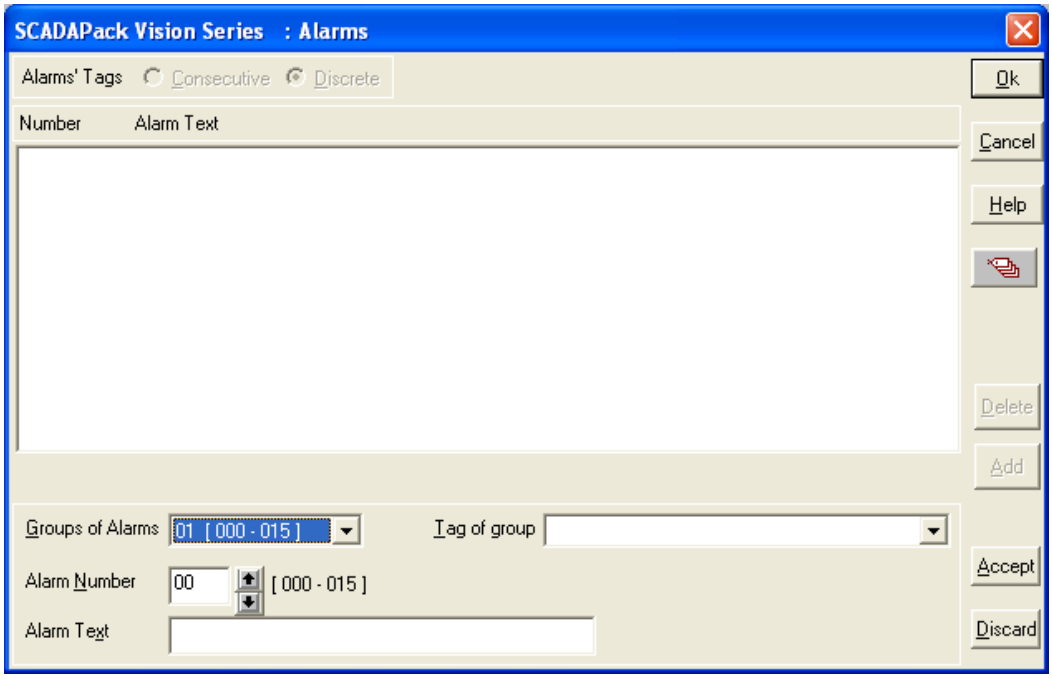
The *Close* command accepts changes to the configuration and closes the dialog.

The *Help* command displays the on-line help for the dialog.

7.2.6 Alarms

The *Alarms* command defines up to 31 alarms. Individual bits in single-word registers trigger these alarms. Once triggered, an alarm message is displayed on a SCADAPack Vision screen in a FIFO (First In First Out) queue. The alarm can be acknowledged with a globally or locally defined key task.

The command opens the *Alarms* dialog.



Alarms are defined on any single bit of any one-word (16-bit) tag. All the tags must be defined before defining the alarms.

Alarms can be set on one type of tag only: *Discrete*.

The *Groups of Alarms* selection field allows for the selection of one of two available groups of alarms. Group 01 consists of alarms 000 to 015 and group 02 consists of alarms 016 to 030.

The *Tag of group* selection field allows for the selection of the tag to be associated with the group. Only Input Register and Holding Register tags are listed.

The *Alarm Number* field displays which alarm in the selected group is being configured.

The *Alarm Text* field allows for the entry of text to be displayed when the alarm is active up to a maximum of 16 for SCADAPack Vision-10 or 20 alphanumeric characters for SCADAPack Vision-50 with spaces.

The *Ok* command accepts the configuration and closes the dialog.

The *Cancel* command discards any changes to the configuration and closes the dialog.

The *Help* command displays the on-line help for the dialog.

Tags: Displays the *Tags* dialog.

The *Delete* command deletes the selected alarm from the alarm list.

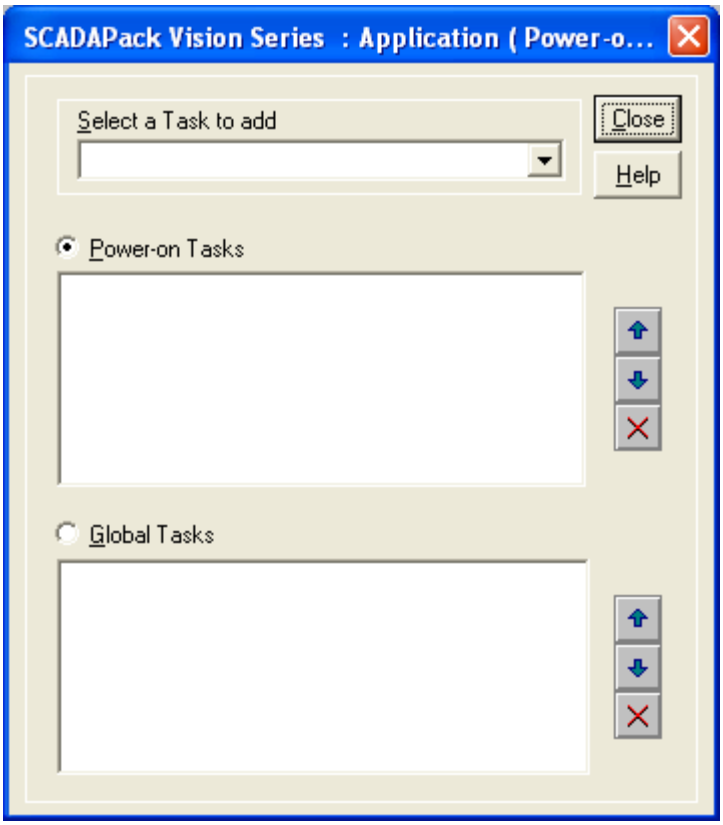
The *Add* command activates the alarm configuration fields.

The *Accept* command accepts the alarm configuration and adds the alarm to the display list.

The *Discard* command discards the alarm configuration for the currently edited alarm.

7.2.7 Application Tasklists

The Application Tasklists command opens the Application (Power-on and Global) Task-lists dialog.



This dialog is used to configure Power-on and Global tasks. Power-on tasks are executed once each time power is applied to the SCADAPack Vision. Global tasks are executed continually while the SCADAPack Vision is communicating with the attached PLC.

The *Select a Task to add* field is used to select one of 18 available tasks. Refer to section ***7.9-Key Task Definitions*** for a detailed explanation of these tasks.

The *Power-on Tasks* radio button activates the *Power-on Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *Power-on Tasks* radio button is first selected. Tasks are executed in the order that they appear in the list.

The *Global Tasks* radio button activates the *Global Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *Global Tasks* radio button is first selected. Tasks are executed in the order that they appear in the list.

Move Task Up: Moves the currently selected task one position up the list.

Move Task Down: Moves the currently selected task one position down the list.

Delete Task: Deletes the currently selected task.

The *Close* command accepts the task list configuration and closes the dialog.

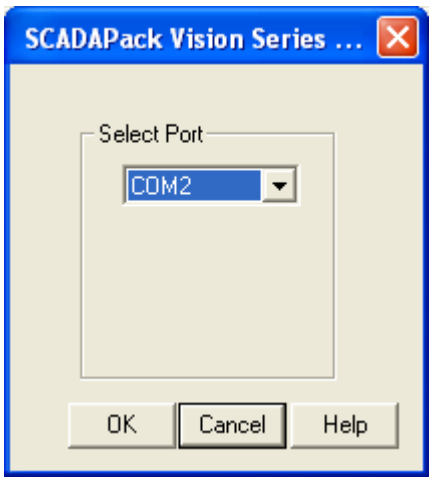
The *Help* command displays the on-line help for the dialog.

7.3 Communicate

The *Communicate* menu is used to configure the PLC-to- SCADAPack Vision communication parameters, to download SCADAPack Vision firmware and download or upload application files to the SCADAPack Vision.

7.3.1 Communication Port

The Communication Port command opens the Communication Port dialog.



This dialog is used to select the computer port through which the application file is written to the SCADAPack Vision. Valid communication ports are COM1, COM2, COM3, COM4, COM5 and COM6.

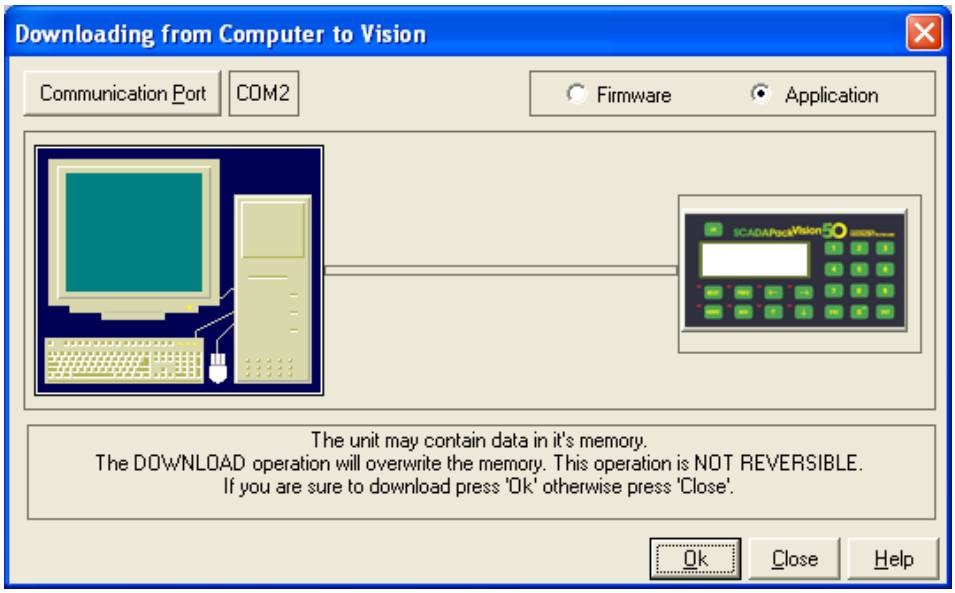
The *OK* command accepts the selection and closes the dialog.

The *Cancel* command discards the selection and closes the dialog.

The *Help* command displays the on-line help for the dialog.

7.3.2 Download

The Download command opens the Downloading from Computer to SCADAPack Vision dialog.


Downloading from Computer to Vision
Communication Port
COM2
Firmware
Application
The unit may contain data in it's memory.
The DOWNLOAD operation will overwrite the memory. This operation is NOT REVERSIBLE.
If you are sure to download press 'Ok' otherwise press 'Close'.
Ok
Close
Help

This dialog is used to write the currently open application file or firmware to the SCADAPack Vision.

The *Communication Port* command opens the *Communication Port* dialog. This is the same as the *Communication Port* command in the *Communicate* menu.

Selecting the *Firmware* radio button downloads the firmware file, located in the \Vision\drivers\ subdirectory, to the SCADAPack Vision when the *Ok* command is selected. The firmware file has the file extension ".abs". Downloading firmware overwrites existing firmware in the SCADAPack Vision.

If communication is disrupted during the firmware download procedure, the SCADAPack Vision display will appear blank. Waiting 30 seconds or cycling power to the SCADAPack Vision is required before attempting to download the firmware again. If the SCADAPack Vision still does not respond to the firmware download, the boot-loader may have been corrupted. However, it may still be recoverable by following this procedure:

SCADAPack Vision-10 firmware erase procedure:

- Remove power to the SCADAPack Vision-10.
- Press and hold the F1, F3 and F5 keys simultaneously and firmly.
- Restore power to the SCADAPack Vision-10.
- Keeping the keys pressed for at least three seconds, wait until a blank screen appears (yellow backlight without characters). This screen may contain spurious data on the upper LCD line.
- Release all the three keys.
- Press F2 within 15 seconds.
- After approximately 10 seconds remove power to the SCADAPack Vision-10.
- Restore power to the SCADAPack Vision-10. It should now contain only the boot-loader. The unit should now accept the firmware download.

SCADAPack Vision-60 firmware erase procedure:

- Remove power to the SCADAPack Vision-60.
- Press and hold the F5[HOME], F6 [ACK] and F7[Up-arrow] keys simultaneously and firmly.
- Restore power to the SCADAPack Vision-60.
- Keeping the keys pressed for at least three seconds, wait until a blank screen appears (yellow backlight without characters). This screen may contain spurious data on the upper LCD line.
- Release all the three keys.
- Press F1[NEXT] within 15 seconds.
- After approximately 10 seconds remove power to the SCADAPack Vision-60.
- Restore power to the SCADAPack Vision-60. It should now contain only the boot-loader. The unit should now accept the firmware download.

Selecting the *Application* radio button downloads the currently open application file to the SCADAPack Vision when the *Ok* command is selected. Downloading an application erases the application in the SCADAPack Vision.

Download progress is indicated with a red line that moves from the computer graphic to the SCADAPack Vision graphic.

The *Ok* command downloads (writes) either the firmware or application file from the computer to the SCADAPack Vision depending on the radio button selection.

The *Close* command closes the dialog.

The *Help* command displays the on-line help for the dialog. Selecting the *Application* radio button downloads the currently open application file to the SCADAPack Vision when the *Ok* command is selected. Downloading an application erases the application in the SCADAPack Vision.

Download progress is indicated with a red line that moves from the computer graphic to the SCADAPack Vision graphic.

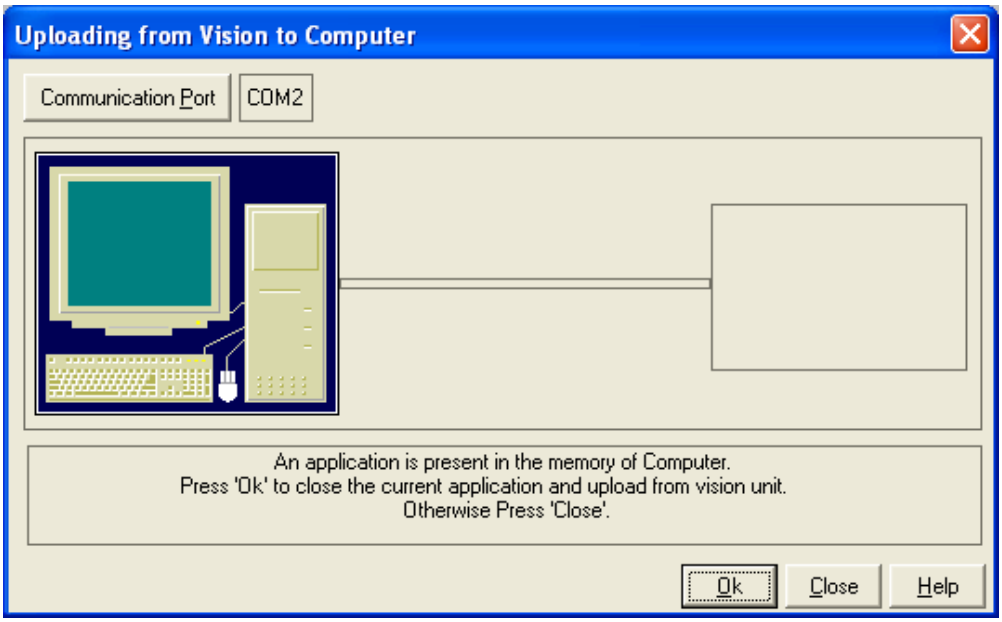
The *Ok* command downloads (writes) either the firmware or application file from the computer to the SCADAPack Vision depending on the radio button selection.

The *Close* command closes the dialog.

The *Help* command displays the on-line help for the dialog.

7.3.3 Upload

The Upload command displays the Uploading from a SCADAPack Vision to Computer dialog.



This dialog is used to upload the application file from the SCADAPack Vision to the computer. Applications currently open in the Vision configuration software are over written by the uploaded application.

The *Communication Port* command opens the *Communication Port* dialog. This is the same as the *Communication Port* command in the *Communicate* menu.

The *Ok* command uploads (reads) application file from the SCADAPack Vision to the computer.

The *Close* command closes the dialog.

The *Help* command displays the on-line help for the dialog.

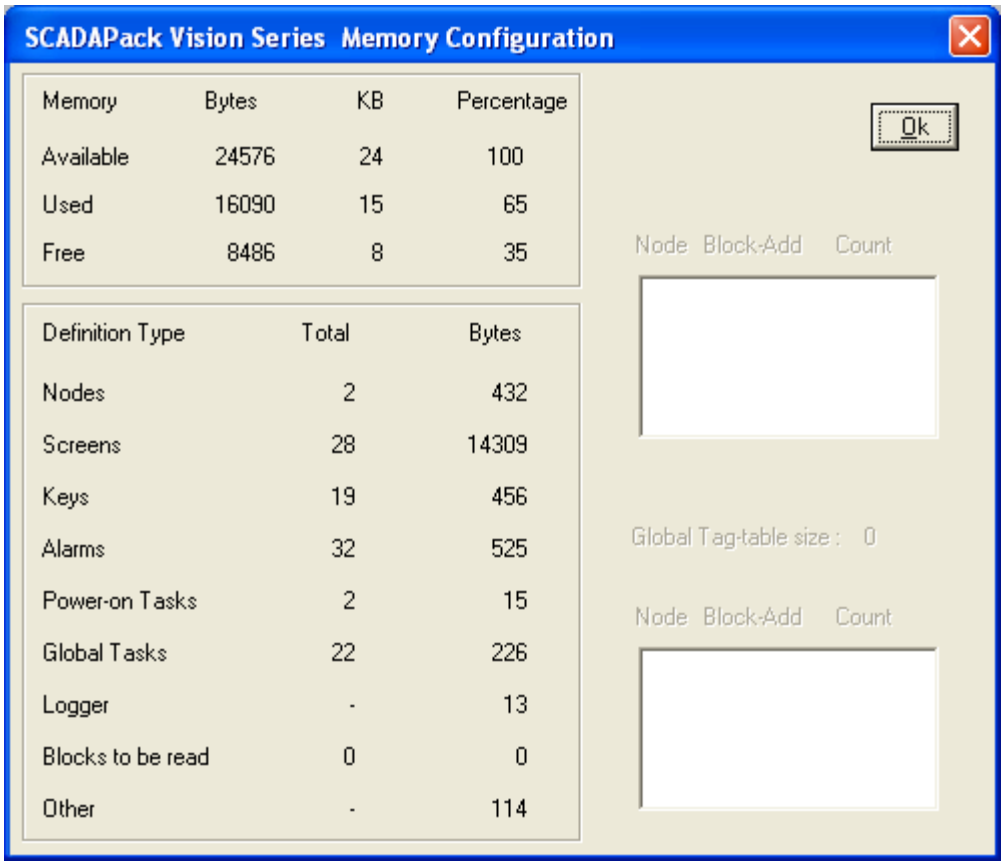
7.4 Utilities Menu

The *Utilities* menu is used to add and remove PLCs from a list of available PLC types and to display the memory configuration of the currently open SCADAPack Vision application.

7.4.1 Add or Remove PLCs

7.4.2 Memory Configuration

The Memory Configuration command opens the Memory Configuration dialog.



This dialog displays the total available, used and free memory usage statistics of the currently open application file. The memory usage by definition type is also displayed.

This command is available only when an application is open.

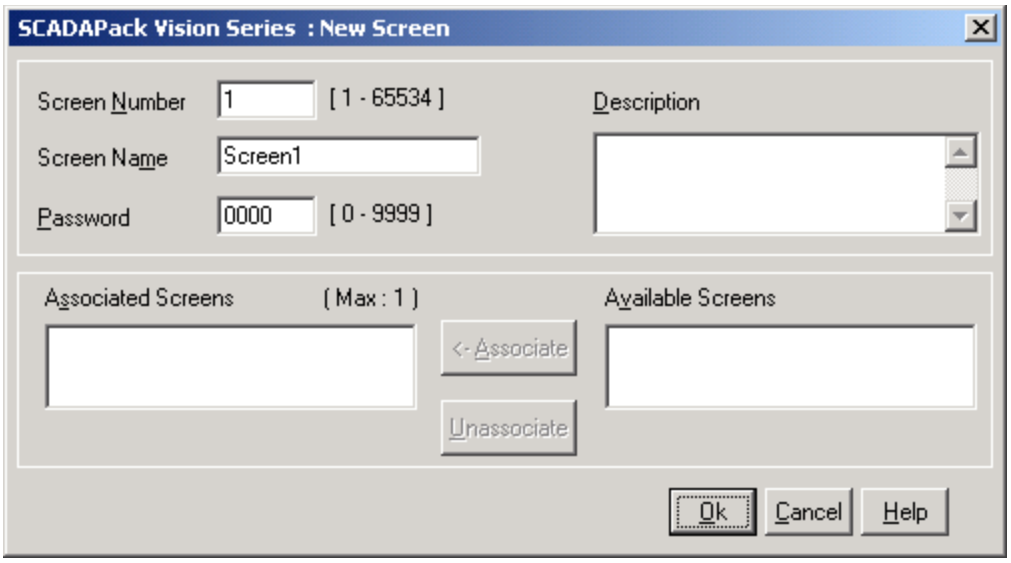
The *Ok* command closes the dialog.

7.5 Screen Menu

The *Screen* menu contains commands to create, configure and edit data-display screens.

7.5.1 New

The *New* command is used to create new data-display screens. The command opens the *New Screen* dialog.



The *Screen Number* field defines a number for the new screen. Valid screen numbers are 1 to 65534.

The *Screen Name* field defines a name for the screen. The name may contain a maximum of twenty alphanumeric characters or spaces.

The *Description* field allows for the entry of descriptive text for the screen. A maximum of one hundred alphanumeric characters may be entered.

The *Password* field defines a numeric pass code used to inhibit access to the screen. Valid passwords are 0 to 9999, where 0 indicates that this option is not used.

7.5.1.1 Associated Screens:

Associated screens are useful in cases where one or more objects are common between different screens. The common part is extracted from all the screens, placed in a new screen and is then associated with the other screens. Any screen can be associated to another screen.

The advantages of associating screens are:

- Saving application memory by extracting common data between different screens and forming a new associate screen.
- Saving application-programming time.

Note: Only one screen can be associated to any screen.

No data entry object can be placed in the screen to be associated.

No PLC tag may be embedded in the screen to be associated. To embed a PLC tag, use a Global Task to copy the PLC tag to an internal SCADAPack Vision tag. The internal tag may then be embedded in the screen to be associated.

The *Associated Screens* field defines the screen to be associated with the current screen. The maximum quantity of associated screens is one.

The *Available Screens* field lists the screens that are available for association with the current screen.

The < - *Associate* command moves entries from the *Available Screens* field to the *Associated Screens* field.

The *Unassociate* command moves entries from the *Associated Screens* field to the *Available Screens* field.

The *Ok* command accepts the configuration and closes the dialog.

The *Cancel command* discards all configuration changes and closes the dialog.

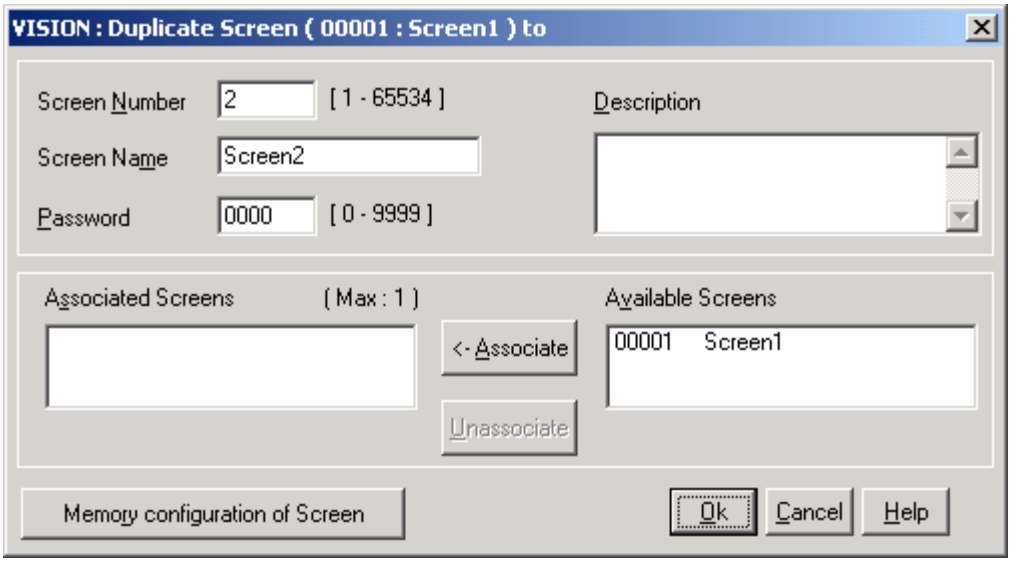
The *Help* command displays the on-line help for the dialog.

7.5.2 Delete

The *Delete* command prompts the user to delete the currently displayed screen.

7.5.3 Duplicate

The *Duplicate* command copies the properties of the currently displayed screen to a new screen. The command opens the *Duplicate Screen* dialog.



This dialog is identical in appearance and functionality to the *New Screen* dialog except for the addition of the *Memory configuration of Screen* command. Refer to the *New* command in the *Screens* menu for more information.

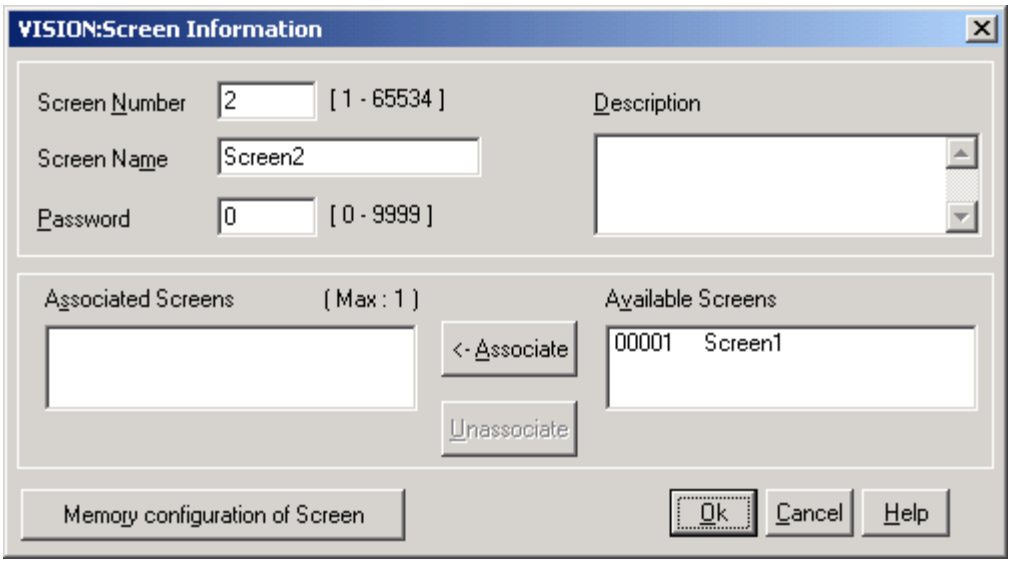
The *Memory configuration of Screen* command displays the memory usage of the currently selected *Available Screen*.

7.5.4 Initialize

The *Initialize* command prompts the user to clear all elements from the currently open screen. This command cannot be undone.

7.5.5 Screen Information

The *Screen Information* command displays the attributes for the currently selected screen. The command opens the Screen Information dialog.

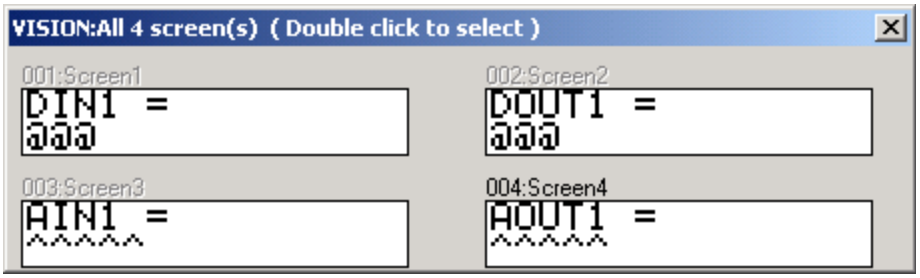


This dialog is identical in appearance and functionality to the *New Screen* dialog except for the addition of the *Memory configuration of Screen* command. Refer to the *New* command in the *Screens* menu for more information.

The *Memory configuration of Screen* command displays the memory usage of the currently selected *Available Screen*.

7.5.6 View All Screens

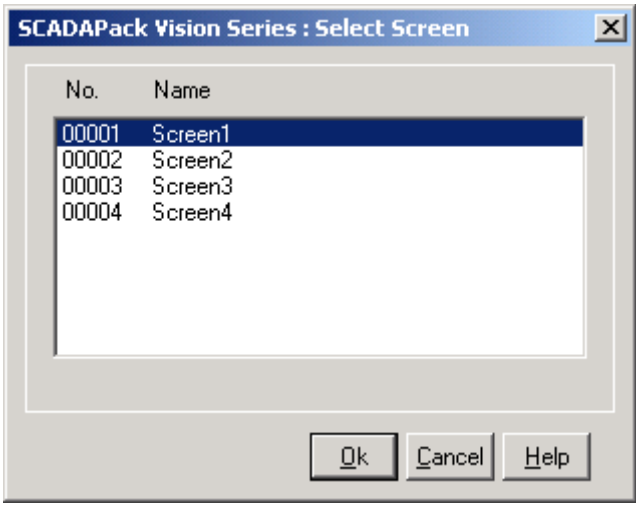
The V*iew All Screens* command displays all screens simultaneously, allowing the user to select a screen to edit. The command opens the *All* screens dialog.



Double-clicking the mouse cursor on a particular screen displays that screen for editing purposes and closes the *All* screens dialog.

7.5.7 Select Screens

The Select Screens command displays a list of all screen names, allowing the user to select a screen to edit. The command opens the Select Screen dialog.



Double-clicking the mouse cursor on a particular screen name displays that screen for editing purposes and closes the *Select Screen* dialog.

The *Ok* command displays the currently selected screen and closes the *Select Screen* dialog.

The *Cancel* command closes the *Select Screen* dialog without changing screen focus.

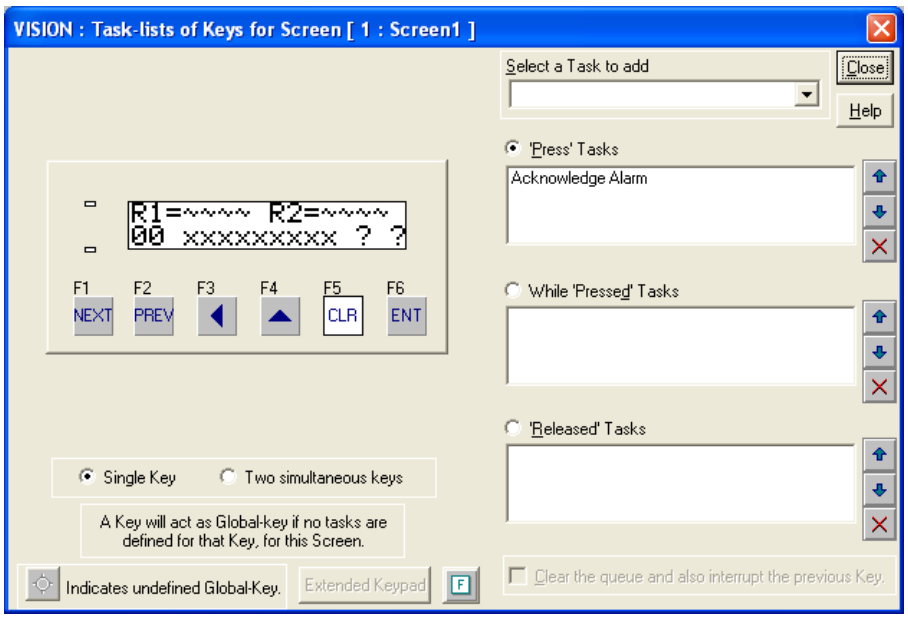
The *Help* command displays the on-line help for the dialog.

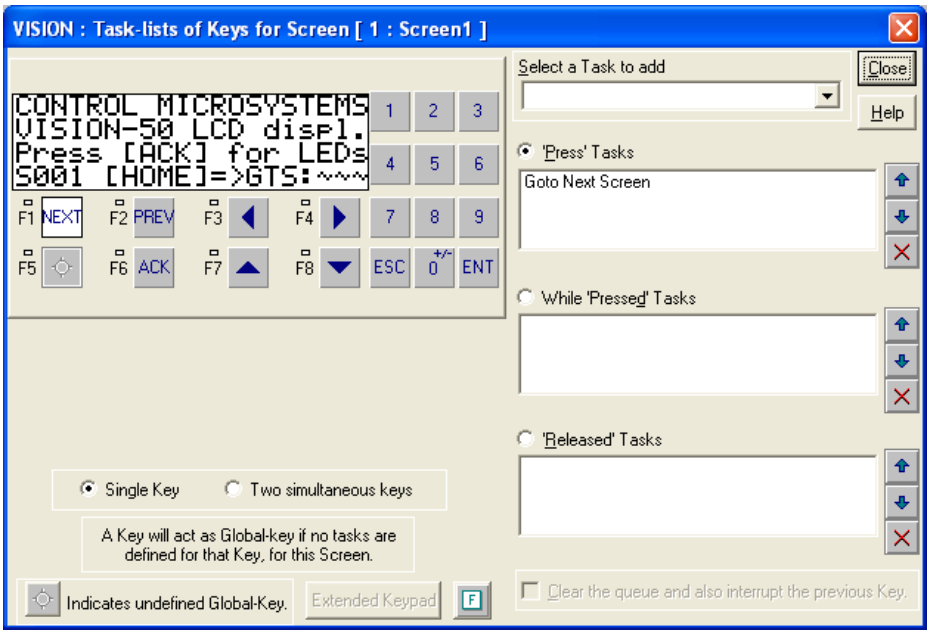
7.5.8 Keys For Screen

The *Keys For Screen* command defines the "local" action of keys. "Local" refers to only the currently displayed screen. Therefore, actions configured in this dialog affect a key's action on the currently displayed screen only. Local key action takes precedence over global key action.

Key action is defined using tasks. Tasks can be executed upon pressing the key, while the key is held and when the key is released.

The command opens the *Global Keys' Task-lists* dialog.





The configuration of local keys is identical to that of global keys. Refer to section ***7.2.5-Global Keys*** for detailed information.

Global Keys: Opens the *Global Keys' Task-lists* dialog.

The *Select a Task to add* field is used to select one of 18 available tasks. Refer to section **7.9-*Key Task Definitions*** for a detailed explanation of these tasks.

The *'Press' Tasks* radio button activates the *'Press' Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *'Press' Tasks* radio button is first selected. *'Press' Tasks* are executed one time when the key is pressed and in the order they appear in the list.

The *While 'Pressed' Tasks* radio button activates the *While 'Pressed' Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *While 'Pressed' Tasks* radio button is first selected. *While 'Pressed' Tasks* are executed continually while the key is pressed and in the order they appear in the list.

The *'Released' Tasks* radio button activates the *'Released' Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *'Released' Tasks* radio button is first selected. *'Released' Tasks* are executed one time when the key is released and in the order they appear in the list.

Move Task Up: Moves the currently selected task one position up the list.

Move Task Down: Moves the currently selected task one position down the list.

Delete Task: Deletes the currently selected task.

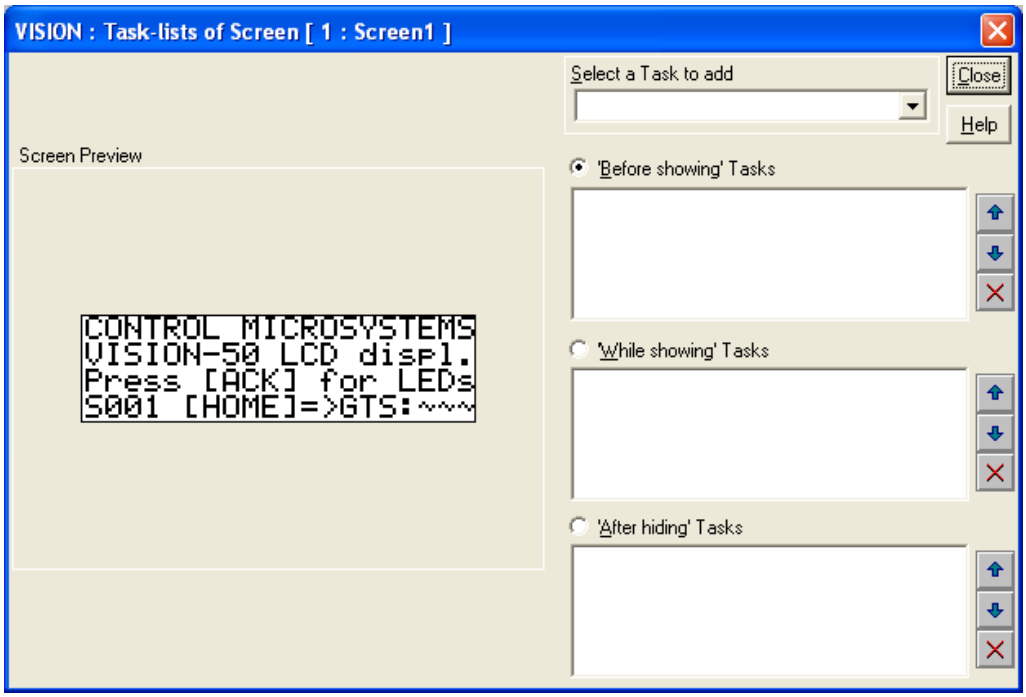
The *Close* command accepts changes to the configuration and closes the dialog.

The *Help* command displays the on-line help for the dialog.

7.5.9 Task-lists of Screen

The *Task-lists of Screen* command defines the actions that occur when a particular screen is displayed. These actions are defined using tasks. Tasks can be executed before the screen is displayed, while the screen is displayed and after the screen is displayed.

The command opens the *Task-lists of Screen* dialog.



The *Select a Task to add* field is used to select one of 18 available tasks. Refer to the section **7.9-*Key Task Definitions*** for a detailed explanation of these tasks.

The *'Before Showing' Tasks* radio button activates the *'Before Showing' Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *'Before Showing' Tasks* radio button is first selected. *'Before Showing' Tasks* are executed one time just before the screen is displayed and in the order they appear in the list.

The *'While Showing' Tasks* radio button activates the *'While Showing' Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *'While Showing' Tasks* radio button is first selected. *'While Showing' Tasks* are executed continually while the screen is displayed and in the order they appear in the list.

The *'After hiding' Tasks* radio button activates the *'After hiding' Tasks* list. Tasks selected in the *Select a Task to add* field are placed in this list if the *'After hiding' Tasks* radio button is first selected. *'After hiding' Tasks* are executed one time just after leaving the screen and in the order they appear in the list.

Move Task Up: Moves the currently selected task one position up the list.

Move Task Down: Moves the currently selected task one position down the list.

Delete Task: Deletes the currently selected task.

The *Close* command accepts changes to the configuration and closes the dialog.

The *Help* command displays the on-line help for the dialog.

7.5.10 Zoom In

The *Zoom In* command increases the size of the screen display area in the screen-editing dialog.

7.5.11 Zoom Out

The *Zoom Out* command decreases the size of the screen display area in the screen-editing dialog.

7.5.12 Show Alphanumeric Grid

The *Show Alphanumeric Grid* command displays the alphanumeric grid. This grid is a series of dots on the screen display indicating the location of alphanumeric characters.

This command is available when the *Hide Alphanumeric Grid* command is active.

7.5.13 Hide Alphanumeric Grid

The *Hide Alphanumeric Grid* command displays the alphanumeric grid.

This command is available when the Show *Alphanumeric Grid* command is active.

7.5.14 Character Set

The Character Set command displays the available ASCII character set for use as text. This command opens the *Character Set* dialog. Characters are selected with the mouse cursor and are placed in the screen display.

The ASCII characters represented by decimal 0 to 29, are displayed in the dialog as underscored 0 to 29. All other characters are displayed in the dialog, as they will appear on screen.

The command is available when the *Text* command is active and the cursor is inside the Text-insert window.

The *Character Set* dialog is closed by either selecting the close-dialog **X** icon, or by choosing another editing function.

7.5.15 Close Screens Session

The *Close Screens Session* command closes the entire screen-editing display. This can also be accomplished by selecting the close-dialog **X** icon on the screen display.

7.6 Objects Menu

The *Objects* menu contains commands to create/edit data-display, data-entry, text and alarm objects. These objects determine the functionality of the SCADAPack Vision display screens.

7.6.1 Alphanumeric Objects

7.6.1.1 Text

The *Text* command defines a text string on the screen display. The text string can be used to provide a short description of a data point or provide operator-input instructions.

A maximum of 16 alphanumeric characters may be entered per line, for a total of 32 characters per screen for SCADAPack Vision-10 or 20 alphanumeric characters per line, for a total of 80 characters per screen for SCADAPack Vision-60.

Selecting this command activates the *Text* cursor. This cursor is used to point-and-drag a window in the screen display into which the text string is typed.

7.6.1.2 Data Entry

The *Data Entry* command defines a data entry field on the screen display. The data entry field allows an operator to enter information via the keys. This information will then be written to the attached PLC.

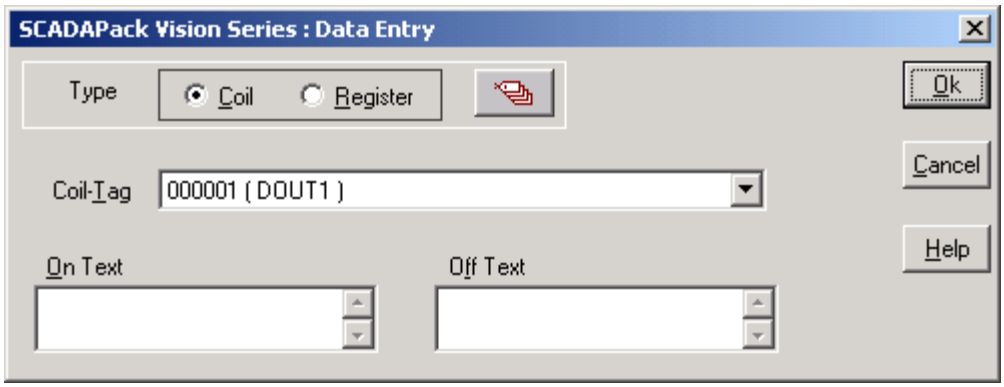
A maximum of 16 alphanumeric characters may be entered per line, for a total of 32 characters per screen for SCADAPack Vision-10 or 20 alphanumeric characters per line, for a total of 80 characters per screen for SCADAPack Vision-60.

Selecting this command activates the *Data Entry* cursor. This cursor is used to point-and-drag a window in the screen display.

Defining the *Data Entry* field location with the cursor opens the *Data Entry* dialog.

This dialog defines the tag and data format to be associated with the *Data Entry* object. The Type is set to *Coil* by default.

Selecting the *Coil* radio button displays edit fields used to define a coil *Data Entry* object.

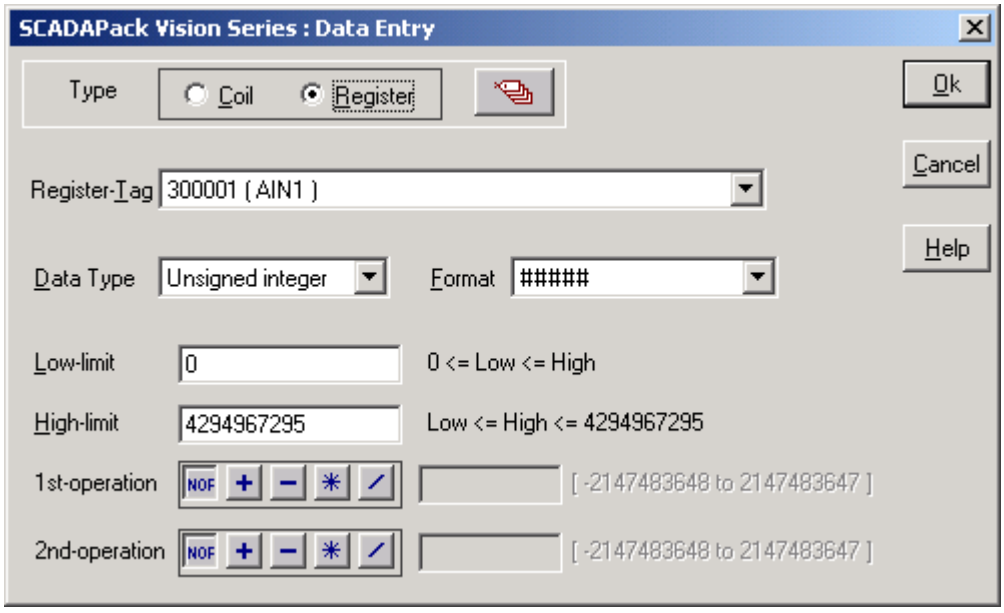


The *Coil-Tag* selection field allows for the selection of a tag from a list of all pre-defined coil-based tags.

The *On Text* edit field allows for the entering of a text string that is displayed when the associated coil-based tag is ON. A maximum of 16 alphanumeric characters may be entered. The size of the pre-defined point-and-drag window may also limit the length of the message.

The Off *Text* edit field allows for the entering of a text string that is displayed when the associated coil-based tag is OFF. A maximum of 16 alphanumeric characters may be entered. The size of the pre-defined point-and-drag window may also limit the length of the message.

Selecting the *Register* radio button displays edit fields used to define a register *Data Entry* object.



The *Register-Tag* selection field allows for the selection of a tag from a list of all pre-defined register-based tags.

The *Data Type* selection field allows for the selection of one of the following data types.

- Unsigned Integer
- Signed Integer
- Hexadecimal
- BCD (Binary-Coded-Decimal)

- Binary (one word)
- Float

The *Format* selection field allows for the selection of a display format for the tag value. The available formats are dependent on the selected *Data Type*.

The *Low-limit* entry field allows for the entering of a low limit for the tag value. The operator is prohibited from entering values less than this limit. The low limit is dependent on the selected *Data Type*.

The *High-limit* entry field allows for the entering of a high limit for the tag value. The operator is prohibited from entering values greater than this limit. The high limit is dependent on the selected *Data Type*.

The *1st-operation* select fields define the first of two mathematical functions that can be performed on the entered register tag data. Four mathematical operands and an entered mathematical factor are available. The range of valid mathematical factor values is dependent on the selected *Data Type*. Selecting the NOP button cancels this feature.

The *2nd-operation* select fields define the second of two mathematical functions that can be performed on the entered register tag data. Four mathematical operands and an entered mathematical factor are available. The range of valid mathematical factor values is dependent on the selected *Data Type*. Selecting the NOP button cancels this feature.

Tags: Opens the *Tags* dialog.

The *Ok* command accepts the configuration and closes the dialog.

The *Cancel* command discards the configuration and closes the dialog.

The *Help* command displays the on-line help for the dialog.

7.6.1.3 Display PLC Data

The *Display PLC Data* command defines a data display field on the screen display. The data displayed in the field is either local SCADAPack Vision register data or data read from the attached PLC.

Data can be displayed as either bit-based, register value-based or register text-based data.

Bit-based data displays the contents of coil or input status tags in an ON or OFF format.

Register value-based data displays the contents of input or holding register tags in one of several numeric formats.

Register text-based data displays different text strings that are dependent on the register value.

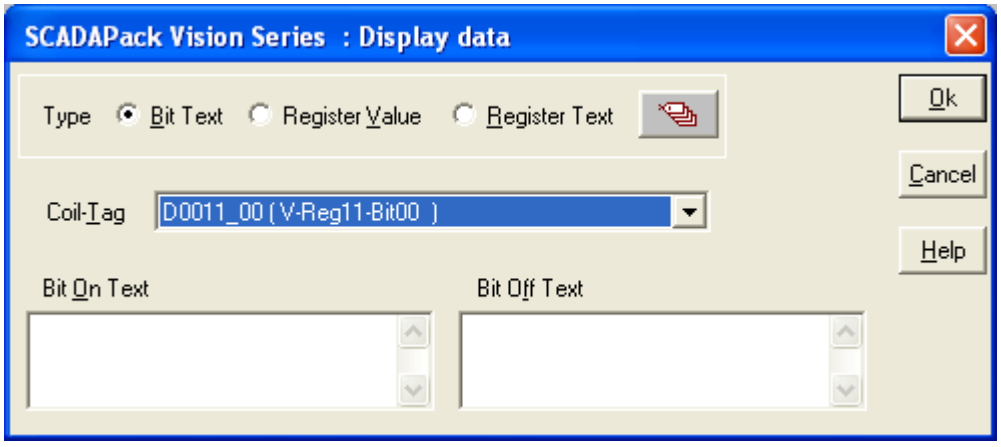
A maximum of 16 alphanumeric characters may be entered per line, for a total of 32 characters per screen for SCADAPack Vision-10 or 20 alphanumeric characters per line, for a total of 80 characters per screen for SCADAPack Vision-60.

Selecting this command activates the *Display PLC Data* cursor. This cursor is used to point-and-drag a window in the screen display.

Defining the data display field location with the cursor opens the *Display Vision or PLC Data* dialog.

This dialog defines the tag and data format to be associated with the data display object. The Type is set to *Bit Text* by default.

Selecting the *Bit Text* radio button displays edit fields used to define a bit-based data display object.



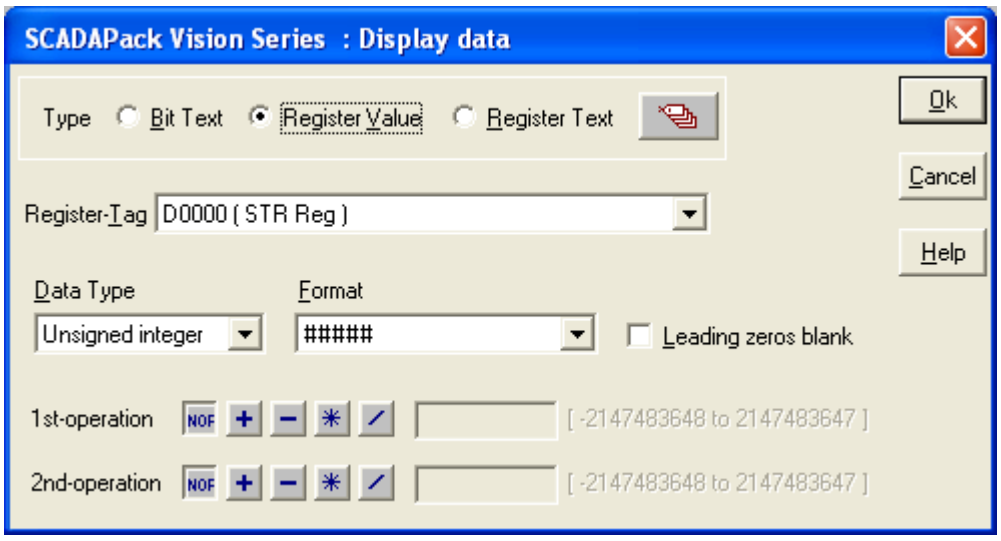
The *Coil-Tag* selection field allows for the selection of a tag from a list of all pre-defined bit-based tags.

The *Bit On Text* edit field allows for the entering of a text string that is displayed when the associated bit-based tag is ON. A maximum of 16 alphanumeric characters may be entered. The size of the pre-defined point-and-drag window may also limit the length of the message.

The *Bit Off Text* edit field allows for the entering of a text string that is displayed when the associated bit-based tag is OFF. A maximum of 16 alphanumeric characters may be entered. The size of the pre-defined point-and-drag window may also limit the length of the message.

The *Bit Text* selection field allows for the selection of a tag from a list of all pre-defined bit-based tags.

Selecting the *Register Value* radio button displays edit fields used to define a register value-based data display object.



The *Register-Value* selection field allows for the selection of a tag from a list of all pre-defined register-based tags.

The *Data Type* selection field allows for the selection of one of the following data types.

- Unsigned Integer
- Signed Integer
- Hexadecimal
- BCD (Binary-Coded-Decimal)
- Binary (one word)
- Float

The *Format* selection field allows for the selection of a display format for the tag value. The available formats are dependent on the selected *Data Type*.

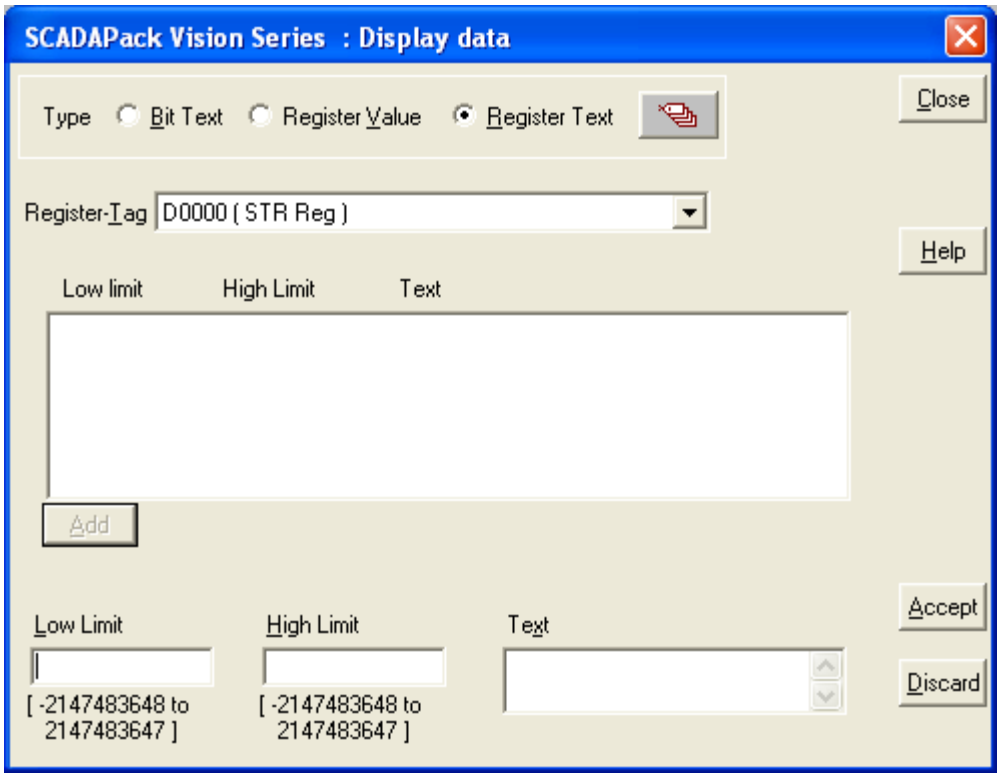
The *Low-limit* entry field allows for the entering of a low limit for the tag value. The operator is prohibited from entering values less than this limit. The low limit is dependent on the selected *Data Type*.

The *High-limit* entry field allows for the entering of a high limit for the tag value. The operator is prohibited from entering values greater than this limit. The high limit is dependent on the selected *Data Type*.

The *1st-operation* select fields define the first of two mathematical functions that can be performed on the entered register tag data. Four mathematical operands and an entered mathematical factor are available. The range of valid mathematical factor values is dependent on the selected *Data Type*. Selecting the NOP button cancels this feature.

The *2nd-operation* select fields define the second of two mathematical functions that can be performed on the entered register tag data. Four mathematical operands and an entered mathematical factor are available. The range of valid mathematical factor values is dependent on the selected *Data Type*. Selecting the NOP button cancels this feature.

Selecting the *Register Text* radio button displays edit fields used to define a register text-based data display object.



The *Register-Tag* selection field allows for the selection of a tag from a list of all pre-defined register-based tags.

Selecting the *Add* command displays edit fields used to define register value ranges and their corresponding text messages.

The *Low Limit* entry field allows for the entering of the lower limit in a range of register values. The low limit is dependent on the selected *Data Type*.

The *High Limit* entry field allows for the entering of the higher limit in a range of register values. The high limit is dependent on the selected *Data Type*.

The *Text* entry field allows for the entering of a text string that is displayed when the associated register-based tag contains a value within the low and high limits. A maximum of 20 alphanumeric characters may be entered for SCADAPack Vision-10 and 50 characters for SCADAPack Vision-50.

The configured low/high range and associated text string entries are displayed in the list.

There is no limit to the number of low/high range and text entries

Each low/high limit range must be unique and not overlap another.

The *Accept* command accepts the current configuration and adds it to the list.

The *Discard* command discards the currently selected list entry.

Tags: Opens the *Tags* dialog.

The *Close* command accepts the configuration and closes the dialog.

The *Help* command displays the on-line help for the dialog.

7.6.1.4 Bargraph

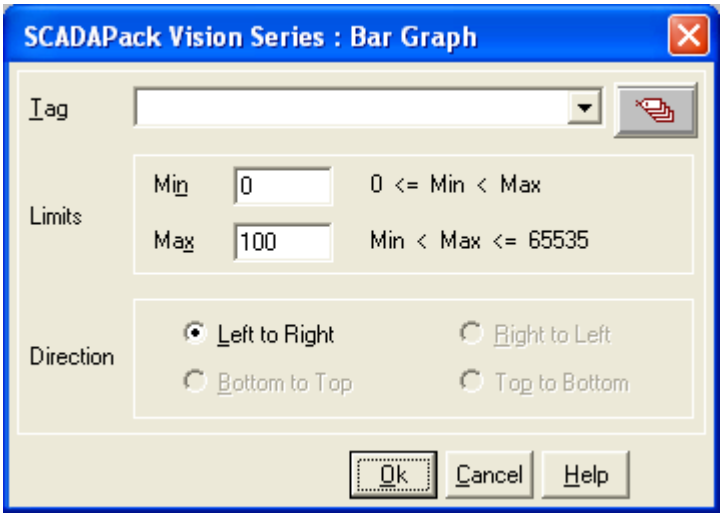
The *Bargraph* command defines a horizontally oriented bargraph that is used to provide a visual representation of an analog signal based on a configurable full-scale value.

A series of rectangular characters fill up the line of text in proportion to percentage of full scale. For example, an 8-character bar graph, corresponding to an analog input signal in the PLC, will display 8 rectangular characters for a full scale signal, 6 characters for 75% of full scale signal, 4 characters for 50% of full scale signal etc.

The *Bargraph* object contains 8 rectangular characters and operates from left to right only.

Selecting this command activates the *Bargraph* cursor. This cursor is used to point-and-drag a window in the screen display.

Defining the bargraph field location with the cursor opens the *Bar Graph* dialog.



The *Tag* selection field allows for the selection of a tag from a list of all pre-defined register-based tags.

The *Min* entry field defines the minimum limit for the bargraph object. The value must be less than the *Max* value.

The *Max* entry field defines the maximum limit for the bargraph object. The value must be greater than the *Min* value and less than 65535.

The *Direction* of operation is fixed at *Left to Right* and cannot be changed.

Tags: Opens the *Tags* dialog.

The *Ok* command accepts the configuration and closes the dialog.

The *Cancel* command discards the configuration and closes the dialog.

The *Help* command displays the on-line help for the dialog.

7.6.1.5 Alarm

The *Alarm* command defines an alarm-display object. This object can display any pre-defined alarm as soon as it is triggered.

All triggered alarms are listed in a FIFO (First in First Out) queue. A maximum of 31 alarms may be in the FIFO queue. The first alarm will be at the top of the FIFO queue with the newest alarm entering from the bottom. A triggered alarm will remain in the FIFO queue until the alarm condition ceases to exist and the alarm has been operator-acknowledged.

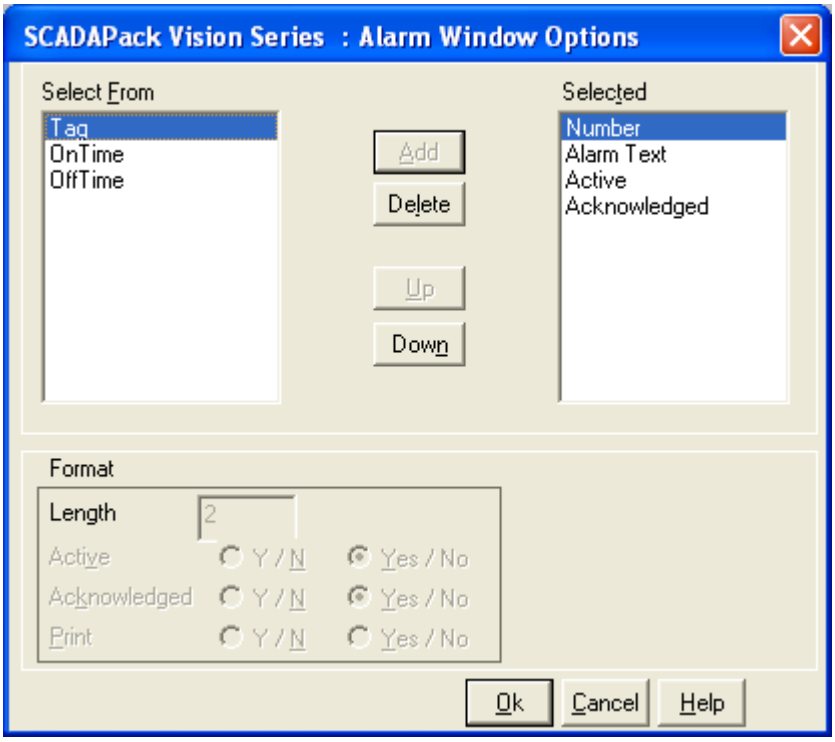
Each alarm must be acknowledged at some time. Alarms are acknowledged by using keys that have been defined with the *Acknowledge Alarm* option in the *Key's Specific Task* command.

Alarms displayed in the FIFO queue may be scrolled through by using keys that have been defined with the *Next Alarm* and *Previous Alarm* options in the *Key's Specific Task* command.

The alarm-display object displays alarm information in a series of columns and may contain up to a maximum of 16 alphanumeric characters per line for SCADAPack Vision-10 and 20 alphanumeric characters per line for SCADAPack Vision-60.

Selecting this command activates the *Alarm* cursor. This cursor is used to point-and-drag a window in the screen display. To maximize the amount of alarm information that can be displayed, create an alarm display field that is the entire width of the display, i.e. 16 or 20 characters long.

Defining the alarm field location with the cursor opens the Alarm dialog.



The *Select From* list displays the available types of alarm information that can be used to display triggered alarms. The four types are:

- **Alarm Text**: Displays the text message associated with the alarm. If an alarm condition is true, the alarm text is displayed. If the alarm condition is false, a blank space is displayed.
- **Number:** Displays the alarm number. If an alarm condition is true, the alarm number is displayed. If the alarm condition is false, *??* is displayed.
- **Active:** Displays the active status. If an alarm condition is true, the active alarm status displays *yes*. If the alarm condition is false the active alarm status displays *no*.

- **Acknowledged**: Displays the acknowledged status. If an alarm condition is true and the alarm has been acknowledged, the acknowledged alarm status displays *yes*. If an alarm condition is true and the alarm has not yet been acknowledged, or the alarm condition is false, the acknowledged alarm status displays *no*.

The *Add* command moves selected items from the *Select From* list to the *Selected* list.

The *Delete* command removes selected items from the *Selected* list to the *Select From* list.

The *Up* command moves the selected item in the *Selected* list up one row.

The Down command moves the selected item in the *Selected* list down one row.

The *Selected* list contains the alarm information that is displayed in the alarm-display object. Items in this list will be displayed in the order that they are listed.

The *Length* entry field defines the length of the text message to be displayed. The field is available when *Alarm Text* is highlighted in the *Selected* list.

The *Active* radio buttons define how the active alarm status is displayed. The status can be displayed as either *Y/N* or *Yes/No*. The radio buttons are available when *Active* is highlighted in the *Selected* list.

The *Acknowledged* radio buttons define how the acknowledged alarm status is displayed. The status can be displayed as either *Y/N* or *Yes/No*. The radio buttons are available when *Acknowledged* is highlighted in the *Selected* list.

The *Ok* command accepts the configuration and closes the dialog.

The *Cancel* command discards the configuration and closes the dialog.

The *Help* command displays the on-line help for the dialog.

Note:	It is important that the total number of selected alarm-parameter characters and column spaces does not exceed the width of the configured alarm window. Undefined display behavior may occur.

7.6.2 Flash

The *Flash* command enables the flashing capability of selected data entry, text, and bargraph objects.

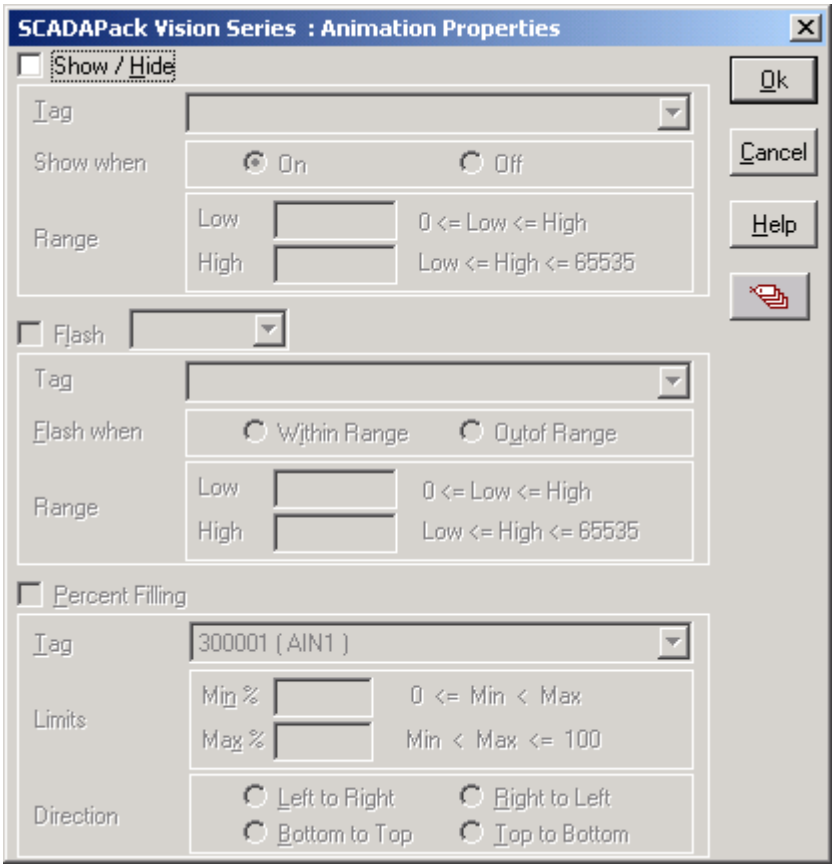
7.6.3 Speed

The *Speed* command defines the flash rate properties of data entry, text, and bargraph objects. Three flash rates are available: slow, medium and fast.

7.6.4 Animation Properties

The *Animation Properties* command defines the conditional show/hide and flash rate properties of data entry, text, and bargraph objects. Objects can be defined to show/hide or flash depending on the value of a tag.

Selecting the Animation Properties command opens the Animation Properties dialog.



7.6.4.1 Show/Hide

The *Show/Hide* fields define the conditions under which an object will be shown or hidden, conditional upon the value of a tag.

The *Show/Hide* check box enables the *Show/Hide* option.

The *Tag* entry field allows for the selection of the pre-defined tag.

The *Show when* radio buttons define if the object is to be shown when the bit-based tag is *On* or *Off*, or when the register-based tag is *Within* or *Out* of the defined range.

The *Range* entry boxes define the *Low* and *High* register-based tag values for the *Show/Hide* condition.

7.6.4.2 Flash

The *Flash* fields define the conditions, under which an object will flash, conditional upon the value of a tag.

The *Flash* check box enables the *Flash* option. The rate of flash is selected in the field to the right of the *Flash* check box.

The *Tag* entry field allows for the selection of the pre-defined tag.

The *Flash when* radio buttons define if the object is to flash when the bit-based tag is *On* or *Off*, or when the register-based tag is *Within* or *Out* of the defined range.

The *Range* entry boxes define the *Low* and *High* register-based tag values for the *Flash* condition.

The *Ok* command accepts the configuration and closes the dialog.

The *Cancel* command discards the configuration and closes the dialog.

The *Help* command displays the on-line help for the dialog.

Tags: Opens the *Tags* dialog.

7.6.5 Selector

The *Selector* command enables the selector cursor to select objects on the display screen.

7.6.6 Hide Objects Menu

The *Hide Objects Menu* command hides the *Objects and Properties dialog*. This command is available only when the *Show Objects Menu* command is currently active.

7.6.7 Show Objects Menu

The *Show Objects Menu* command shows the *Objects and Properties dialog*. This command is available only when the *Hide Objects Menu* command is currently active.

7.7 Tools Menu

The *Tools* menu contains commands to undo/redo commands and cut, copy, paste and edit screen display objects.

7.7.1 Undo

The *Undo* command un-does the last command.

7.7.2 Redo

The *Redo* command un-does the last *Undo* command.

7.7.3 Select All

The *Select All* command selects all objects on the currently open display screen.

7.7.4 Cut

The *Cut* command removes the currently selected object from the display screen and places it in the computer's buffer memory for later insertion.

7.7.5 Copy

The *Copy* command copies the currently selected object from the display screen and places it in the computer's buffer memory for later insertion.

7.7.6 Paste

The *Paste* command inserts the object previously saved in the computer's buffer memory to the screen display.

7.7.7 Edit

The *Edit* command opens the edit dialog for the currently selected object.

7.7.8 Hide Tools

The *Hide Tools* command hides the *Tools dialog*. This command is available only when the *Tools* command is currently active.

7.7.9 Show Tools

The *Show Tools* command displays the *Tools dialog*. This command is available only when the *Hide Tools* command is currently active.

7.8 Help

The Help menu allows access to the SCADAPack Vision program on line help.

7.8.1 Index

The Index command opens the *Vision Configuration Software Help* index. Help is available on the following topics:

- The *Introduction* provides an overview of the SCADAPack Vision configuration software.
- *Screen Elements* describes individual parts of the SCADAPack Vision configuration software as well as basic concepts.
- *The Essentials* describes how to quickly create a new application.
- *Menus* describes individual menus and their associated commands.
- *Dialogs* describes all secondary screen dialogs.
- *Technical Support* provides Control Microsystems' contact numbers and addresses.
- *About Vision Configuration Software* provides release history, notes, and copyright information.

7.8.2 About SCADAPack Vision Series

The *About SCADAPack Vision Series* command displays program version information.

7.9 Key Task Definitions

Individual keys can be configured to function in a variety of ways. The following is a list of supported key task definitions. Definitions not listed below are not supported by the SCADAPack Vision and cannot be used.

- *Goto Screen*: The current screen is replaced by the defined screen.
- *Goto Next Screen*: The current screen is replaced by the next sequential screen.
- *Goto Previous Screen*: The current screen is replaced by the previous sequential screen.
- *Write Value to a Tag*: A constant value is written to the tag using this task.
- *Add a Constant Value to Tag*: A constant value is added to the current value of the tag using this task.
- *Subtract a Constant Value from Tag*: A constant value is subtracted from the current value of the tag using this task.
- *Add Tag B to Tag A*: The value of Tag B is added to the value of Tag A. The result will be stored in Tag A. Both tags must contain the identical number of bytes otherwise errors may occur.

- *Subtract Tag B from Tag A*: The value of Tag B is subtracted from the value of Tag A. The result will be stored in Tag A. Both tags must contain the identical number of bytes otherwise errors may occur.
- *Turn Bit On:* A coil or bit is turned on.
- *Turn Bit Off*: A coil or bit is turned off.
- *Toggle Bit*: A currently off coil or bit is turned on; a currently on coil or bit is turned off.
- *Copy Tag B to Tag A*: The value of Tag B is copied to Tag A. The value of Tag B is unchanged. Both tags must contain the identical number of bytes otherwise errors may occur.
- *Swap Tag A and Tag B*: The value of Tag A is copied to Tag B and the value of Tag B is copied to Tag A. Both tags must contain the identical number of bytes otherwise erroneous results may occur.
- *Copy Tag to STR*: A PLC tag can be copied to the **STR**, **S**creen **T**riggering **R**egister. The STR is an internal SCADAPack Vision register, which can be used to decide which screen is to be displayed.
- *Copy Tag to LED*: The value of a tag is copied to the SCADAPack Vision LEDs.
- *Delay*: The execution of a task is delayed. Tags are updated during this delay. After the delay period is expired, the next task is performed.
- Wait: The execution of a Task is conditionally delayed. The next task is not executed until the specified condition is false.
- Key's Specific Task: In addition to the previously described tasks, each key can be assigned a task that is common to all tags. The types of key-specific tasks are:
    - Clear Data Entry: Clears Data after data entry is initiated.
    - Cancel Data Entry: Cancels the data entered and restores previous data.
    - Accept Data Entry: Initiates data entry and accepts data entered.
    - Switch to next Data Entry: Next data entry is selected.
    - Increase Value by 1: Value of a tag is increased by 1.
    - Decrease Value by 1: Value of a tag is decreased by 1.
    - Increase Digit by 1: Value of a single digit of a tag is increased by 1.
    - Decrease Digit by 1: Value of a single digit of a tag is decreased by 1.
    - Shift Value to Left: Value is shifted to left.
    - Move Cursor to Left: Cursor is moved to left to edit previous digit.
    - Move Cursor to Right: Cursor is moved to right to edit next digit.
    - Sign Key (+/-): Used for signed data entry.
    - Sign Key (+/-) and 0: Single key used as a sign key as well as numeric key 0. If this key is pressed immediately after data entry is initiated, key is taken as sign key else it is taken as '0' key.
    - Numeric Key 0: Enters a '0' after data entry is initiated.
    - Numeric Key 1: Enters a '1' after data entry is initiated.
    - Numeric Key 2: Enters a '2' after data entry is initiated.
    - Numeric Key 3: Enters a '3' after data entry is initiated.

- Numeric Key 4: Enters a ‘4’ after data entry is initiated.
- Numeric Key 5: Enters a ‘5’ after data entry is initiated.
- Numeric Key 6: Enters a ‘6’ after data entry is initiated.
- Numeric Key 7: Enters a ‘7’ after data entry is initiated.
- Numeric Key 8: Enters a ‘8’ after data entry is initiated.
- Numeric Key 9: Enters a ‘9’ after data entry is initiated.
- Numeric Key A: Enters an ‘A’ after data entry is initiated.
- Numeric Key B: Enters a ‘B’ after data entry is initiated.
- Numeric Key C: Enters a ‘C’ after data entry is initiated.
- Numeric Key D: Enters a ‘D’ after data entry is initiated.
- Numeric Key E: Enters a ‘E’ after data entry is initiated.
- Numeric Key F: Enters a ‘F’ after data entry is initiated.
- Edit Bit On: A coil is turned on after data entry is initiated.
- Edit Bit Off: A coil is turned off after data entry is initiated.
- Acknowledge Alarm: Active alarm is acknowledged.
- Next Alarm: Next alarm from the alarm FIFO queue is displayed.
- Previous Alarm: Previous alarm from the alarm FIFO queue is displayed.

8 Warrantee and License

Warranty Disclaimer

Control Microsystems makes no representation or warranty with respect to the SCADAPack Vision program. The sole obligation of Control Microsystems shall be to make available all published updates or modifications to the Vision program at a price, which will not exceed the current market price.

Limitation of Liability

The foregoing warranty is in lieu of all other warranties, expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The user shall, at their own discretion, determine the suitability of the SCADAPack Vision program for their intended use. In no event will Control Microsystems, its agents, distributors, representatives, employees, officers, directors, or contractors be liable for any special, direct, indirect or consequential damages, losses, costs, claims, demands or claim for lost profits, fees or expenses of any nature or kind arising from the use of the SCADAPack Vision program. In accepting this product, you agree to these terms.

Modifications

Control Microsystems reserves the right to make modifications to the SCADAPack Vision program and to change its specifications without notice.

Non-Disclosure

SCADAPack and SCADAPack Vision are registered trademarks of Control Microsystems. The SCADAPack Vision program is a copyrighted product of Control Microsystems. Users are specifically prohibited from copying the SCADAPack Vision program, in whole or in part, by any means whatsoever, except for purposes of a backup copy, and from disclosing proprietary information belonging to Control Microsystems.

9 SCADAPack Vision-10 Specifications

Disclaimer: *Control Microsystems reserves the right to change product specifications without notice. For more information visit www.controlmicrosystems.com .*

Power:	5 VDC+ 5%.
	100mA typical
Power Saving Mode:	With SCADAPack LP only.
Display:	Backlit LCD.
	2 lines of 16 characters.
Bezel:	IP65 rated Keypad
Function Keys:	6 user-definable keys with tactile feedback.
Status LEDs:	2 user-definable LEDs.
Memory:	24K Application Memory.
Communication:	Two RS232 ports:
	SCADAPack Vision-10 to PLC (for PLC data reading/writing).
	SCADAPack Vision-10 to computer (for application/firmware downloads).
Environment:	
Temperature:	-20 to 60 ºC.
	-4 to 140 ºF.
Humidity:	10% to 90% (Non condensing).
Area Classification:	UL Class 1 Division 2, Groups A, B, C and D for use in hazardous locations.
Immunity to ESD:	Level 3 as per IEC1000-4-2
Immunity to Transients:	Level 3 as per IEC1000-4-4
Radiated Susceptibility:	Level 3 as per IEC1000-4-3
Emissions:	EN55011 CISPR A

10 SCADAPack Vision-50 Specifications

Disclaimer: *Control Microsystems reserves the right to change product specifications without notice. For more information visit www.controlmicrosystems.com .*

Power:	5 VDC+ 5%.
	160mA typical
Power Saving Mode:	With SCADAPack LP only.
Display:	Backlit LCD .
	4 lines of 20 characters.
Bezel:	IP65 rated Keypad
Function Keys:	20 user-definable keys with tactile feedback.
Status LEDs:	8 user-definable LEDs.
Memory:	24K Application Memory.
Communication:	Two RS232 ports:

SCADAPack Vision-50 to PLC (for PLC data reading/writing).

SCADAPack Vision-50 to computer (for application/firmware downloads).

Environment:	
Temperature:	-20 to 60 ºC.
	-4 to 140 ºF.
Humidity:	10% to 90% (Non condensing).

Area Classification:	UL Class 1 Division 2, Groups A, B, C and D for use in hazardous locations.
Immunity to ESD:	Level 3 as per IEC1000-4-2
Immunity to Transients:	Level 3 as per IEC1000-4-4
Radiated Susceptibility:	Level 3 as per IEC1000-4-3
Emissions:	EN55011 CISPR A

11 SCADAPack Vision-60 Specifications

Disclaimer: *Control Microsystems reserves the right to change product specifications without notice. For more information visit www.controlmicrosystems.com .*

Power:	5 VDC+ 5%.
	185mA typical
Power Saving Mode:	With SCADAPack LP only.
Display:	Backlit LCD.
	4 lines of 20 characters.
Bezel:	IP65 rated Keypad
Function Keys:	20 user-definable keys with tactile feedback.
Status LEDs:	8 user-definable LEDs.
Memory:	128K Application Memory.
Communication:	Two RS232 ports:
	SCADAPack Vision-60 to PLC (for PLC data reading/writing).
	SCADAPack Vision-60 to computer (for application/firmware downloads).
Environment:	
Temperature:	-20 to 60 ºC.
	-4 to 140 ºF.
Humidity:	10% to 90% (Non condensing).
Area Classification:	UL Class 1 Division 2, Groups A, B, C and D for use in hazardous locations.
Immunity to ESD:	Level 3 as per IEC1000-4-2
Immunity to Transients:	Level 3 as per IEC1000-4-4
Radiated Susceptibility:	Level 3 as per IEC1000-4-3
Emissions:	EN55011 CISPR A